THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

National Oil Show, Sherman Hotel, Chicago, Jan. 19 to 25.

Independent Oil Men's Association of New England, American House, Boston, Mass., Jan. 22, 23, 24.

Oklahoma Oil Jobbers Association, Huckins Hotel, Oklahoma City, Jan. 23, 24.

National Petroleum Association, Fire and Safety Marshals, William Penn Hotel, Pittsburgh, Pa., Jan. 24.

Wisconsin Petroleum Association, Hotel Pfister, Milwaukee, Jan. 28, 29.

Northwest Petroleum Association, North Dakota division, Grand Forks, N. D., Jan. 30, 31.

South Dakota Independent Oil Men's Association, Carpenter Hotel, Sioux Falls, S. D., Feb. 11, 12.

Iowa Petroleum Association, Fort Des Moines Hotel, Des Moines, Ia., Feb. 11, 12.

Ohio Petroleum Marketers Association, Deshler-Wallick Hotel, Columbus, O., Feb. 19, 20, 21.

Illinois Petroleum Marketers, Pere Marquette Hotel, Springfield, Ill., Feb. 26, 27.

Western Petroleum Refiners Association, Shreveport, La., March 10, 12.

Michigan Oil Men's Association, Statler Hotel, Detroit, March 19, 20, 21.

American Association of Petroleum Geologists, Roosevelt Hotel, New Orleans, La., March 20, 21 and 22.

American Oil Burner Association and National Oil Burner Show, Hotel Stevens, Chicago April 7 to 12.

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General

Increased Cracking Cuts Amount of Crude Refiners Can Run in 1930..... 19
Probe of Price Fixing In California Started by Attorney General..... 21
California Price Probe "Disconcerting" to Industry Says Kingsbury..... 22
Institute Activities Reorganized by Divisions 24
A.P.I. Report of Refinery Operations Week Ended Jan. 4 25
Recovery in Oklahoma City Nears 10,000,000-barrel Mark 26
Production of Gulf Coast Crude Above Market Demand 27
Review of Late Production News 28
Group Three Refiners Prepare to Fight New Threat to Freight Rates 29
Sun Oil Co. to Build 550 Mile Line to Pump Gasoline West..... 33
Ector Area Getting First Attention of Two New West Texas Fields..... 34
Oklahoma City's Huge Potential Grows Daily as "Gushers" Come In.... 40
Consider Extending California Proration to October or November..... 44
Drilling Reports from Leading Fields 45, 46, 47
U. S. Crude Production and Imports Week Ended January 11..... 81

Engineering

High Anti-Knock Gasoline Produced from Pennsylvania Gas Oil—*by Gustav Egloff and Edwin F. Nelson* 28
First Cross Section of Regional Series is Completed in Oklahoma..... 48
Modern Refining—Science and Practice—Article 6—*by Col. George A. Burrell* 55
New Knock Testing Method Developed at University of Michigan—*by George Granger Brown and Harry E. Zuck* 61

Merchandising

Code Signers Can Meet Competition for Commercial Accounts 23
Make All the Space Kick in a Profit—*by R. H. Thomas*..... 67
Gas Tax Evasion Found in California 94

Markets

Chicago, All Products Unchanged 85
Mid-Continent, Increased Shipments Bolster Gasoline 87
Refinery Price Tables 88, 90, 91
Pennsylvania, Bright Stock Active 95
Eastern Domestic, Mild Weather Fails to Help Gasoline 96
Gulf Coast, Million Barrels of Panuco Crude Sold 96
Wax, Prices Respond to Better Demand 97
Complete Seaboard Prices 98
Tank Wagon Price Tables 100, 101
Gulf Lubes Demand Slack 103
Crude Oil Prices, All Fields 103, 105

Departments

The Mid-Continent Skyline 37
Our Industry 42
On the Lazy Bench 76
Oil Company Finance 106, 108, 110

THERE is always one stumbling block in the efforts of destructive politicians to place excessive tax burdens upon the oil producing industry. That's Harry H. Smith, secretary and counsel of the Mid-Continent Oil & Gas Association. He has rendered his industry distinguished service in the marshalling of facts to present, both in state legislatures and national congress, to combat new taxes.

Among oil industry organizations the Mid-Continent Oil & Gas Association has long been a leader. Much of the credit for the manner in which it functions goes to Secretary Smith, although he always says that the success is due to an able president and board of directors.

Mr. Smith entered upon his duties with the association in May, 1919, and has served as secretary continuously since that time.

Born in Illinois, in that area commonly known as "Little Egypt," he spent most of his youth in Missouri and was educated at Washington University, St. Louis.

He practiced law in western Oklahoma from 1906 to 1919. He began his association work at a time when the chief problem facing the producing industry was that of taxes, both federal and state.

Mr. Smith is also secretary of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association and of the Osage Lessees' Oil & Gas Association.

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Increased Cracking Cuts Amount of Crude Refiners Can Run in 1930

By V. B. Guthrie
N. P. N. MANAGING EDITOR

CLEVELAND, Jan. 10

INCREASED use of cracking plants at refineries is reducing materially the amount of crude that can be put through refineries in this country in 1930 if our industry is to avoid manufacturing a large surplus of gasoline.

This increase in cracking, it is pointed out, is a factor that must be considered in any estimates as to crude throughput to meet this year's gasoline requirements.

Study of the extent to which cracking increased during 1929 brings an estimate of 175,000,000 barrels of cracked gasoline to be made in 1930, a daily average of 480,000 barrels, by one authority on the economics of refining.

This is an increase of a little better than 20 per cent over the total of 144,000,000 barrels of cracked gasoline made in 1929, an average of 395,000 barrels daily.

This authority points out that cracking is increasing rapidly because of its lower cost of manufacturing gasoline and that an average of 460,000 barrels daily of cracked gasoline will be made during the first quarter of 1930 and that the extent of cracking will increase rapidly beyond that.

With 31,000,000 barrels more cracked gasoline to be made in 1930, requirements for straight-run gasoline will have to be reduced from 1929 figures materially if stocks are to be held at anywhere near their present figure, which means that far less crude can be run through stills than in that year.

This same authority estimates total gasoline requirements for 1930 at 469,000,000 barrels if stocks are not to be added to. This estimate provides for 229,000,000 barrels of straight-run gasoline, as against 245,000,000 barrels made in 1929.

Of this 1930 total gasoline supply to meet requirements without adding to stocks, 52,000,000 barrels will come from natural gasoline, it is estimated, as against 45,570,000 barrels this year. Imports of gasoline will be 13,000,000 barrels, as against 9,152,000 barrels imported this year.

Total crude runs to meet 1930 gasoline requirements on this basis will be 916,000,000 barrels, as against 988,000,000 barrels this year actually run.

This same authority, however, presents a different picture for 1930 based on refinery operations as they appear likely now.

On this basis, 478,000,000 barrels of gasoline will be made, of which 238,000,000 gallons will be straight run, and the same amounts of cracked and natural gasoline made as previously estimated and the same volume of gasoline imported.

This rate of operations would add 9,000,000 barrels of gasoline to stocks for the year, bringing the total to 53,000,000 barrels and would require 952,000,000 barrels of crude to be run through stills, a daily average of 2,608,000 barrels, but still less than the volume actually run in 1929.

Even this estimate for the year

Estimated Gasoline Supply and Demand 1929 and 1930

(Figures in barrels of 42 Gallons based on U. S. Bureau of Mines figures)

	1929 (Actual)		1930 Requirements (no additions to storage)		1930 (as year appears now)	
	Total	Daily Average	Total	Daily Average	Total	Daily Average
SUPPLY:						
Straight-Run	245,699,000	673,000	229,000,000	627,000	238,000,000	652,000
Cracked	143,978,000	395,000	175,000,000	480,000	175,000,000	480,000
Natural Gasoline	45,570,000	125,000	52,000,000	142,000	52,000,000	142,000
Imports	9,152,000	25,000	13,000,000	36,000	13,000,000	36,000
TOTAL SUPPLY	444,399,000	1,218,000	469,000,000	1,285,000	478,000,000	1,310,000
DEMAND:						
Domestic Consumption	373,365,000	1,023,000	404,000,000	1,107,000	404,000,000	1,107,000
Exports	60,100,000	165,000	65,000,000	178,000	65,000,000	178,000
TOTAL DEMAND	433,465,000	1,188,000	469,000,000	1,285,000	469,000,000	1,285,000
STOCKS:						
Beginning of year	33,066,000	.....	44,000,000	.....	44,000,000	.....
End of year	44,000,000	.....	44,000,000	.....	53,000,000	.....
Change	+10,934,000	+30,000	.....	.....	+ 9,000,000	+ 25,000
CRUDE RUNS:						
Domestic	911,768,000	2,498,000	.....	.....	.....	.....
Foreign	76,034,000	208,000	.....	.....	.....	.....
TOTAL RUNS	987,802,000	2,706,000	916,000,000	2,500,000	952,000,000	2,608,000
GASOLINE RECOVERY:						
Straight-run	24.87	.....	25.00	.....	25.00	.....
Cracked	14.58	.....	.....	.....	.....	.....

Estimated Domestic Consumption of Gasoline by Months for 1930, Natural Gas, Gasoline Run Through Refineries, Gasoline Imports and Exports

(Figures in Barrels of 42 Gallons)

	Domestic Consumption 1929	Estimated Domestic Consumption 1930		Estimated 1930 Natural Gas, Gasoline		Estimated Imports 1930		Estimated Exports 1930		
		Total	Daily Average	Total	Daily Average	Total	Daily Average	Total	Daily Average	
January	22,602,000	24,321,000	785,000	4,014,000	130,000	1,114,000	36,000	4,921,000	159,000	January
February	22,776,000	25,331,000	905,000	3,806,000	136,000	842,000	30,000	4,388,000	157,000	February
March	27,495,000	30,017,000	968,000	4,212,000	136,000	761,000	25,000	4,973,000	160,000	March
April	32,019,000	32,684,000	1,089,000	4,144,000	138,000	1,178,000	39,000	5,116,000	171,000	April
May	34,117,000	35,713,000	1,152,000	4,243,000	137,000	1,118,000	36,000	6,786,000	219,000	May
June	33,163,000	36,562,000	1,219,000	3,999,000	133,000	1,080,000	36,000	6,145,000	205,000	June
July	36,860,000	40,158,000	1,295,000	4,290,000	138,000	980,000	32,000	5,961,000	192,000	July
August	37,759,000	40,844,000	1,318,000	4,472,000	144,000	1,140,000	37,000	5,948,000	192,000	August
September	33,336,000	37,047,000	1,235,000	4,404,000	147,000	1,134,000	38,000	5,285,000	176,000	September
October	32,816,000	36,037,000	1,162,000	4,982,000	161,000	1,253,000	40,000	5,805,000	187,000	October
November	31,503,000	33,208,000	1,107,000	4,576,000	153,000	1,201,000	40 000	5,148,000	172,000	November
December	28,919,000	32,078,000	1,035,000	4,858,000	157,000	1,199,000	39,000	4,524,000	147,000	December
TOTAL	373,365,000	404,000,000	1,107,000	52,000,000	143,000	13,000,000	36,000	65,000,000	178,000	TOTAL

which appears likely now, adding as it does to gasoline stocks, presupposes a considerable reduction in the scale of refinery operations from late December figures of the American Petroleum Institute, when crude was being put through stills at the rate of around 2,668,000 barrels a day.

This same authority estimates that the general gasoline situation will be unsound if the industry enters April with stocks larger than last year at April 1. Then stocks were a little over 47,000,000 barrels. As of the end of 1929 stocks were about 44,000,000 barrels. This leaves but 3,000,000 barrels to be added to stocks for our first quarter operations this year. Last year we added about 15,000,000 barrels to stocks in the first quarter.

We usually consume about a fifth of our annual gasoline requirements in the first quarter of the year. On this basis for domestic consumption and exports for the first three months of 1930 we shall need about 95,000,000 barrels, at the rate of 1,044,000 barrels daily. In December we were producing gasoline at the rate of 1,230,000 barrels daily, which gives some idea of the extent to which operations must be reduced if we are to avoid a heavy surplus of stocks for the first quarter, and go into the active season with gasoline stocks no larger than a year ago April 1.

As indicating how extensively cracking has developed as a factor in the gasoline situation, it is estimated that production of cracked gasoline in 1929 increased at the rate of 17.50 per cent over 1928, for the entire country, while production of straight run gasoline increased only 12.11 per cent during the year. California produced over half again as much cracked gasoline in 1929 as in 1928. Louisiana-Arkansas produced a quarter more cracked gasoline in 1929 than the year before.

Production of cracked gasoline in the last quarter of 1929 averaged more than 13,000,000 barrels per month, as compared with about 10,000,000 barrels per month in the first quarter of the year, 11,000,000 barrels per month in the second quarter and more than 12,000,000 barrels per month in the third quarter. Detailed figures showing production of cracked gasoline by months in the past two years are shown in an accompanying table.

Only under unusual circumstances is the production of cracked gasoline decreased over any extended period. With expensive cracking equipment installed usually the refiner finds it advantageous to keep it operating to capacity. With crude prices anywhere near their present level the production of cracked gasoline is cheaper than the production of straight run motor fuel.

Another important factor which tends to keep the curve of cracked gasoline production rising is the growing demand for anti-knock gasoline with good starting and acceleration qualities. Cracking produces a better anti-knock product and one which requires less natural gasoline blending to give good volatility specifications.

One helpful factor in the current situation is that California refineries, it is believed, will ship somewhat less gasoline to Atlantic and Gulf ports in 1930 than in 1929. The 1929 figure was 23,751,000 barrels, which was 44 per cent more than was shipped in 1928. For 1930 it is estimated that around 21,500,000 barrels will be shipped.

Production of Cracked Gasoline 1928 and 1929

(Barrels of 42 Gallons)

	Total 1928	Percent of Total U. S.	Total 1929	Percent of Total U. S.	Increase or Decrease 1929 over 1928 Total	Percent
EAST COAST:						
Total	21,790,000	17.78	25,763,000	17.89	3,973,000	18.24
Daily Average	60,000	.....	70,000	.....	10,000	.....
APPALACHIAN:						
Total	4,579,000	3.74	5,418,000	3.76	839,000	18.33
Daily Average	13,000	.....	15,000	.....	2,000	.....
INDIANA-ILL.-KY:						
Total	23,279,000	19.00	27,286,000	18.95	4,007,000	17.22
Daily Average	64,000	.....	75,000	.....	11,000	.....
OKLAHOMA-KANSAS:						
Total	19,758,000	16.12	21,072,000	14.64	1,314,000	6.66
Daily Average	54,000	.....	58,000	.....	4,000	.....
TEXAS:						
Total	30,849,000	25.17	35,358,000	24.56	4,509,000	14.61
Daily Average	84,000	.....	97,000	.....	13,000	.....
LOUISIANA-ARKANSAS:						
Total	8,141,000	6.64	10,212,000	7.09	2,071,000	25.50
Daily Average	22,000	.....	28,000	.....	6,000	.....
ROCKY MOUNTAIN:						
Total	6,780,000	5.53	7,166,000	4.98	386,000	5.70
Daily Average	18,000	.....	19,000	.....	1,000	.....
CALIFORNIA:						
Total	7,378,000	6.02	11,703,000	8.13	4,325,000	58.62
Daily Average	20,000	.....	32,000	.....	12,000	.....
TOTAL UNITED STATES:						
Total	122,554,000	100.00	143,978,000	100.00	21,424,000	17.50
Daily Average	335,000	.....	394,000	.....	59,000	.....
TEXAS AND LOUISIANA GULF COASTS:						
Total	33,587,000	27.41	37,481,000	26.03	3,894,000	11.59
Daily Average	92,000	.....	103,000	.....	11,000	.....

Production of Cracked Gasoline 1928 and 1929

(Figures in Thousands of Barrels of 42 Gallons)

	1928	1929
Jan.	8,894	11,047
Feb.	8,677	9,992
Mar.	9,571	10,400
Apr.	9,223	10,644
May	9,602	11,723
June	9,688	11,883
July	10,651	12,301
Aug.	11,028	12,820
Sept.	11,352	12,803
Oct.	11,532	13,352
Nov.	11,379	13,163
Dec.	10,957	.....
Total	122,554	*130,128

*Eleven Months' total.

Probe of Price Fixing in California Started by Attorney General

By A. E. Heiss
N. P. N. STAFF WRITER

THE United States Department of Justice has started an investigation of price fixing by California oil companies, presumably gasoline price fixing, although no statement as to the nature of the investigation has been issued here.

Attorney General Mitchell has sent G. A. Amen, a special assistant, from Washington to San Francisco. Officially he will assist George J. Hatfield, district attorney at San Francisco. In fact he will have charge of the proceedings before the grand jury and of the trial of the indictments, if any are returned.

District Attorney Hatfield, at San Francisco, has summoned the following companies to have their officials appear before him for questioning: Standard Oil Co. of California, Shell Union Oil Corp., Western Oil & Refining Co., Associated Oil Co., American Refining Corp., General Petroleum Corp., Edington Witz Refining Co., Gilmore Oil Co., Hancock Oil Co., Richfield Oil Co., Hercules Oil Co., Petroleum Oil Co., Sunset Pacific Oil Co., Union Oil Co. of California, Rio Grande Oil Co., Texas Corp., Seaside Oil Co., Vernon Oil Co. and United States Refining Co.

No Statement Issued

No information as to the facts, or allegations of fact, upon which the indictments are being sought were vouchsafed by Mr. Mitchell. Only tacitly was it even admitted that indictments were being sought or that agent Amen had been selected to bring the prosecution. The first assumption was that negotiations among California men looking to the ending of price wars last year were being used as the foundation for the accusations.

Then Kenneth R. Kingsbury, president of the Standard of California, issued a statement indicating that the accusations would be founded on the signing of the form put out by the Federal Trade Commission signifying acceptance of the code of marketing practices formulated under the guiding hand of that body and accepted by the industry at the trade body's solicitation.

Attorney General Mitchell refused to comment upon that. Another officer of the Department of Justice, however, suggested that many times persons do things in purported compliance with a rule or code, which, when examined, proves to be wholly beyond the scope of the rule or code. In other words the suggestion was that, even if the Californians who had been summoned to appear before the grand jury said that what they had done had been in accordance with the code of ethics, that did not necessarily signify that they had been within the four corners of the code.

The insinuation was that the California oil companies had done something, in the way of limiting production or restoring prices which, in the opinion of Attorney General Mitchell, was beyond the scope of the code.

Officers of the Federal Trade Commission frankly admitted that the Attorney General had not taken them into his confidence if he was proceeding against the California oil men for doing things they thought warranted by the code. They pointed out there was certainly nothing in the code that contravened the anti-trust laws. In this connection it has been suggested that the agreement negotiated by Secretary of the Interior Wilbur and Dr. George Otis Smith, head of the U. S. Geological Survey, to hold down production in the Kettleman Hills field, in California, would be subject to attack under the anti-trust laws at the hands of a prosecuting officer who was convinced that the letter and spirit of the anti-trust laws could not be modified in any degree by conservation laws and policies of state and nation. The agreement about Kettleman Hills clearly aims to prevent production and the ultimate effect might be to hold up prices or even to raise them.

Mitchell Is Ultra Conservative

California oil men were represented in press dispatches from San Francisco as being surprised by the step taken by the government. No one acquainted with the mental processes of Attorney General Mitchell is surprised by what he does or thinks in connection with the Anti-trust laws and their enforcement. His ruling, last April, that what the American Petroleum Institute proposed as conservation measures as a result of the conferences it had held with the Federal Oil Conservation Commission, was equivalent to a request that he give the proponents of that conservation policy an anti-trust immunity bath, marked him as an ultra conservative in anti-trust law enforcement. Ultra conservative, in this connection, means one with proclivities to run amuck with the anti-trust laws so that business men will be afraid to take over an ailing business to prevent adverse effects upon business generally lest they be accused of undertaking to monopolize commerce and restrain interstate and foreign commerce.

That ruling fell with stunning effect upon such men as Mark L. Requa and George Otis Smith, who had helped frame what was proposed, not to mention the leaders of the oil industry. Secretary Wilbur refused to comment upon the ruling. Later, however, he devised the agreement under which Kettleman Hills production is being held down. It is an agreement between himself and owners of permits and leases in that potentially powerful producing field, which, under an ultra conservative attorney general, might be attacked under the Sherman law. That statute, in the eyes of strict constructionists, forbids any agreement limiting production or restraining commerce, regardless of other conditions. The Supreme Court of the United States said that statute had to be construed in the light of the rule of reason. That, however, does not prevent an ultra conservative attorney general from seeking indictments. The President of the United States is the only one who can restrain an attorney general.

Agent Amen, the man who is to have charge of the proceedings looking to indictments, has been a field agent of the Department of Justice. For this purpose, that of presenting the matter to the grand jury at San Francisco, he has been made a special assistant to the attorney general. He is said to have extended an investigation over oil company operations in California, Washington, Oregon, Utah, New Mexico and Arizona.

Change Meeting Dates

CLEVELAND, Jan. 11.—The South Dakota Independent Oil Men's Association has changed the date of its annual meeting to Feb. 11 and 12. It will be held at the Carpenter hotel at Sioux Falls. Original dates were changed on account of a conflict with another meeting.

"Disconcerting" to Industry Says Kingsbury

SAN FRANCISCO, Jan. 10.—That the investigation concerns the adoption of a code of marketing practices by the oil companies in California, as elsewhere, and presents the "disconcerting" aspect of one department of the government challenging the legality of an action taken at the request of another department, was brought out in a statement issued by Kenneth R. Kingsbury, president of the Standard Oil Co. of California. His statement was:

"The situation presents the disconcerting aspect of one department of the Government challenging the legality of an action taken at the request of another department. It appears that the investigation will relate to the adoption of a code of marketing ethics by the oil industry.

"The national code of marketing ethics was framed after two years of public effort on the part of the American petroleum industry for the purpose of securing uniformly fair practices in the oil industry and to promote the principles of conservation in a business in which the federal administration has shown so much interest. The proposed code was submitted by the American Petroleum Institute to the Federal Trade Commission and brought to the attention of the Department of Justice.

"Later the Federal Trade Commission approved the code after it had made certain amendments thereto and the code was then signed by oil companies throughout the United States at the request of the Federal Trade Commission. It is surprising that the legality of the code should now be subjected to investigation and attack by the Department of Justice.

"It would seem that the oil industry was justified in assuming that a code of marketing practices which was fostered and specifically approved by the Federal Trade Commission and signed at the commission's request would not thereafter be attacked by the Department of Justice. In effect it is an attack upon a movement in the oil industry directly in line with the efforts of the Administration, as recently indicated by the conferences called by the President for the stabilization of business and the promotion of economy in business practices.

"As to the reference in the press to the alleged agreement with Mr. Long, this relates to purchase of gasoline from Long sold to him by small refiners whose marketing facilities are limited. The arrangement has been discussed on several occasions with representatives of the Department of Justice who considered that it was a matter of the federal government's concern, being wholly intrastate, having no bearing on interstate commerce or prices.

"It is a peculiarly unfortunate time for the Department of Justice to attack those who are endeavoring to cooperate with the government in promoting its policies of conservation, not only in marketing but in the production of crude oil, and whose efforts are already attended with enough difficulty. Such an attack will obviously encourage those who for selfish reasons are opposing those policies."

Standard Celebrates Sixtieth Birthday

CLEVELAND, Jan. 14.—The sixtieth anniversary of the founding of the Standard Oil Co., was celebrated with a big birthday party given by President W. T. Holliday of the Standard Oil Co. of Ohio at the Hollenden Hotel, Cleveland Jan. 10.

Some 200 oil men and prominent business men of Cleveland and vicinity attended. Thirty-three oil companies were represented with ten of them of Standard Oil ancestry.

John D. Rockefeller, Sr. spoke a personal message to the party through the medium of a talking movie, the first one ever taken of him, and a picture which Mr. Holliday said, was suggested by the veteran founder himself.

Charles T. White, secretary of the Standard of New Jersey, was among the speakers. He had recently found a copy of an old payroll, showing that Mr. Rockefeller was drawing a salary of $15,000 back in the early eighties, that W. H. Foster, who recently retired as a vice president of the Ohio company, was getting $1800 a year as assistant superintendent of the wax plant, and that various men who since rose to positions of prominence, were getting office boy pay which was figured according to the number of days each worked, and not by the week, month or year.

President Holliday referred to the vast change which has occurred in the industry in the past 60 years, and the change he dwelt on particularly was that in sentiment in the relationship of the men and companies in the industry itself. Such a party as he was giving, he said, could not have happened except as the result of the members of the industry being thrown together during the war and their continuing the relationship through the American Petroleum Institute.

There were men in the room who themselves, or their companies before them, had been heavy contributors in money and in effort, in the various attacks on Mr. Rockefeller and the old Standard and who had much to do with bringing about the famous dissolution decree against the old Standard.

Some of the stars of the radio broadcasting world were brought on from New York and gave a two-hour performance from WTAM Cleveland and WLW Cincinnati while the dinner party was in progress.

Three Oil Companies to Join On Refinery in France

NEW YORK, Jan. 11.—The Standard Oil Co. of New Jersey, the Atlantic Refining Co. and the Gulf Refining Co. have made tentative plans to build a jointly owned refinery in France under the French system of limiting imports to the estimated amount not available from home sources.

The American oil companies doing business in France must refine there or face the possibility of seeing their sales decrease as local refiners build up capacity for supplying the French market from the output of their own plants.

It is understood the plant will be built at Point Jerome, near Le Havre. A news dispatch from France says regarding the project:

"The decision to build follows recent preferential tariff legislation calculated to strengthen the French refining industry and protect France's oil supply in time of war.

"At present France refines only 200,000 tons of oil a year while it consumes more than 2,500,000 tons. The government therefore welcomes the Americans' entry into the refining business here."

Buys McCulloch Control

TULSA, Jan. 11.—Control of the McCulloch Oil Co. of Tulsa has been purchased by R. H. Smith, of Philadelphia. Consideration was not made public. J. W. McCulloch, president, who was active in the formation of the Independent Oil & Gas Co. several years ago, retains a substantial interest and will remain as the directing head for a while.

R. H. Smith, who discovered the Wewoka field in 1923, operates in the Mid-Continent as the Oklahoma Co. He recently acquired control of the Marquette Oil Co. (formerly the Gladys Belle Oil Co.). He now controls some 1,400 barrels daily production and about 50,000 acres of undeveloped leaseholds in Oklahoma and Kansas.

Photo by Blank & Stoller, Inc.

Executives of the American Petroleum Institute: W. N. Davis, vice president, Phillips Petroleum Co., vice president for production; W. M. Irish, president, Atlantic Refining Co., vice president for refining; E. B. Reeser, president, Barnsdall Corp., president of the institute; L. P. St. Clair, president, Independent Oil Producers Agency, California, vice president at large; W. R. Boyd, Jr., executive vice president; H. M. Dawes, president Pure Oil Co., vice president for marketing

Code Signers Can Meet Competition For Commercial Accounts

NEW YORK, Jan. 11

DISCOUNTS to purchasers of gasoline at service stations under commercial contracts, in the east, are to continue as given at present, directors of the American Petroleum Institute ruled at their meeting here Jan. 9, approving a resolution to this effect passed to them by the special commercial accounts committee at a meeting the day before.

The wording of the clause of the code of marketing practices referring to commercial discounts was not changed. The committee recommended, however, that the local state committees with the approval of the national committee on interpretations, be authorized to approve the meeting of competition and suspend the requirements for the posting of commercial account prices at service stations in those states or areas where the definition of commercial accounts as given in the code is not now being observed.

This leaves the handling of commercial accounts about as it stands now in the east, where it is a large factor in the gasoline business, except that it allows oil companies to meet existing competition in the giving of discounts at service stations and still regard themselves as living up to the code.

The Institute directors did not wish to change the wording of the code, since they have hopes that in time the giving of discounts to commercial gasoline trade may be eliminated entirely, or at least considerably narrowed from present practice. They did see the necessity, however, for recognizing a condition in the east which was causing the oil company which had signed the code and was living up to its provisions to lose business.

Institute directors, in adopting the resolution of the special committee set up a list of the states in which the provisions of the code are being observed as to commercial accounts and where, therefore, it is not likely to assume the local state committees will suspend these provisions. The states include Ohio, Michigan, Wisconsin, Iowa, Oklahoma, Nebraska, Montana, Utah, Indiana, Illinois, Missouri, Minnesota, Kansas, North Dakota, Wyoming, Nevada, California, Idaho, Washington, Oregon and California.

The committee's report to the institute directors also stated:

"Your committee recognizes that there is a great divergence of opinion on the question of allowing commercial accounts in any form at service stations, and there is, moreover, difference of opinion amongst those who would admit commercial accounts to service stations as to what restrictions should be put upon the practice.

"The committee recognizes that local conditions and previous practices necessitate different treatments and that rules laid down at the present time which are of universal and permanent application might in some states and sections be impractical and unfair.

"The committee further believes that it is desirable that all members of the industry should give the subject

of commercial accounts study in the hope that as rapidly as possible a general policy may be reached which is consistent with public obligation as well as private interest and is of universal application. In many states the commercial account in service stations is not at present in effect and the committee has therefore recommended that the existing limitations put upon its use should not be changed in such states. The committee is aware that the proposed adjustment is not in any sense a solution of the broad problem but believes that by allowing each state, where the subject is in controversy, to consider it as a local issue, it will make possible the continued support of the principles of the code and will provide the machinery for an evolution that will result in a permanent and proper settlement."

The meeting of the special commercial accounts committee, of which Henry M. Dawes, Pure Oil Co., Chicago, is chairman, brought out the divergence of practice in the east and in the western part of the country in the handling of this class of gasoline business.

W. M. Irish, president of the Atlantic Refining Co., Philadelphia, a member of the committee, had previously sent to the other members a memorandum which summed up conditions in the gasoline business in his company's territory which made his company regard it as good business practice to vary from the code in this respect. G. R. Nutty, president of the Gulf Oil Corp., Pittsburgh, took the same stand.

They pointed out that the code defined a commercial account, for which prices as given by the oil company must be posted at both tank wagon and service station deliveries, as including only cars bearing commercial licenses. Their practice has been to allow the commercial discount to salesmen's, superintendents' and executives' cars licensed in the name of the company and they said that, at present in the east, other companies were allowing the discounts to cars licensed in the name of the individual, but presumably used in company business.

Mr. Irish and Mr. Nutty said their companies had lost business to other oil companies through trying to live up to the provision of the code applying to commercial accounts. They said there was an economic justification for discounts to commercial accounts in the east, where municipalities and single companies often purchase from half a million to a million gallons of gasoline a year under contract, and where the nature of their business was such that deliveries must be both tank wagon and service stations and to cars owned by individuals and used in company business. The stand of these two individuals in favor of continuing the discounts to such classes of commercial trade was supported by W. E. Smith, Standard Oil Co. of Kentucky.

While the committee had been formed in response to a resolution adopted at the December institute meeting to see if special discounts to the commercial trade could not be abolished entirely by the oil business, it recognized the conditions in the east and suggested the Institute directors make some more or less temporary provision which would allow the oil companies to meet existing competition in the handling of this class of business.

Members of the committee present in addition to Messrs. Dawes, Irish, Nutty and Smith, were Roy B. Jones, Panhandle Producing & Refining Co., Wichita Falls; W. T. Holliday, Standard Oil Co. of Ohio; and J. A. Moffett, for W. C. Teagle, Standard Oil Co. of New Jersey.

Institute Activities Reorganized by Divisions

NEW YORK, Jan. 11

THE plan for reorganizing the work of the American Petroleum Institute into the three divisions of production, refining and marketing was approved by institute directors meeting here Jan. 9.

General committees were selected for each of the three divisions to carry forward the details of the reorganization and project the work of the divisions. They are to meet in New York Feb. 11.

The general reorganization plan was approved by the directors at the last institute meeting in Chicago. It is designed to provide adequate departmental organization whereby institute activities may be more actively participated in by the membership and to permit independent consideration of specific problems relating to any division and to assure closer cooperation between members engaged in similar branches of the industry. At the general institute meeting a year ago a start was made on this plan by providing for a vice-president of the institute for each of the three principal branches of the industry.

Each of the three divisions is to function as a departmental activity under the general management of the executive officers acting for the board of directors. Any member of the institute may enroll as a member of one or more divisions by paying a $2 fee for each division annually. Associate memberships are to be $5 a year.

Activities of each division are to be under the direction of a general committee of 25 members, each actively engaged in the branch of the industry represented by that particular division. Five from this committee must be members of the board of directors and shall be appointed annually by the president of the institute. The other 20 members are to be elected by the division members.

Each general committee is to have a chairman, vice chairman and secretary. The three divisional vice presidents are chairmen of the general committees in those divisions. W. R. Boyd, Jr., executive vice president of the institute, is vice chairman of each general committee. Secretaries of each division are to be such members of the institute staff as may be designated by Mr. Boyd.

C. A. Young, director of the standardization program and of the division of development and production engineering, is secretary of the general committee for production. Dr. R. P. Anderson, refinery technologist on the institute staff, is secretary of the general committee on refining. The secretary of the committee on marketing has not yet been named.

Each general committee may create an operating committee of seven members including the chairman and vice chairman. Standing and special committees may be created as necessary to carry on the work of each division.

Each division is to hold an annual meeting at the time and place of the regular annual meeting of the institute. If authorized a mid-year meeting may be held by a division.

The president of the institute, the three vice presidents who are chairmen of the respective divisions, the executive vice president and the secretaries of the divisions are to constitute a standing committee on coordination of divisional activities.

Following are the general divisional committees of the institute as appointed at the time of the meeting:

DIVISION OF REFINING

General Committee:

W. M. Irish, Chairman, Atlantic Refining Co.
W. R. Boyd, Jr., Vice Chairman, A.P.I.
R. P. Anderson, Secretary, A.P.I.
R. C. Holmes, The Texas Co.
J. Howard Pew, Sun Oil Co.
E. G. Seubert, Standard Oil Co. of Ind.
K. R. Kingsbury, Standard Oil Co. of Calif.
P. M. Miskell, Empire Companies.
C. F. Meyer, Standard Oil Co. of N. Y.
George Legh-Jones, Shell Oil Co.
E. M. Clark, Standard Oil Co. of N. J.
Geo. R. Nutty, Gulf Refining Co.
Lloyd R. Crawford, Producers & Refiners Corp.
F. A. Pielsticker, Skelly Oil Company.
E. W. Isom, Sinclair Refining Co.
Chas. L. Suhr, Pennzoil Co.
R. B. Kahle, Beacon Oil Co.
D. J. Moran, Continental Oil Co.
Jacob France, Mid-Continent Pet. Corp.
Harry C. Wiess, Humble Oil & Refining Co.
Axtell J. Byles, Tide Water Associated Oil Co.

J. H. Graham, Indian Refining Co.
C. L. Henderson, Vickers Petroleum Co.
W. L. Stewart, Jr., Union Oil Co.
C. M. Fuller, Richfield Oil Co.
C. B. Watson, Pure Oil Co.
A. K. Whitelaw, Standard Oil Co. of Ky.
John L. Gray, Shaffer Oil & Refg. Co.

DIVISION OF MARKETING

General Committee:

Henry M. Dawes, Chairman, Pure Oil Co.
W. R. Boyd, Jr., Vice Chairman, A.P.I.
....., Secretary, A.P.I.
Roy B. Jones, Panhandle Prod. & Rfg. Co.
W. T. Holliday, Standard Oil Co. of Ohio.
H. B. Earhart, White Star Refining Co.
H. R. Gallagher, Shell Co. of Cal.
Geo. P. Whaley, Vacuum Oil Co.
W. V. Hartmann, Gulf Refining Co.
E. L. Shea, Tide Water Associated Oil Co.
W. S. S. Rodgers, The Texas Company.
J. A. Moffet, Standard Oil Co. of N. J.
J. W. Carnes, Sinclair Cons. Oil Corp.
H. D. Collier, Standard Oil Co. of Cal.
R. D. Matthews, Union Oil Co.
Harry D. Frueauff, Cities Service Co.
A. C. Woodman, Richfield Oil Co.
R. D. Leonard, Atlantic Refining Co.
E. J. Bullock, Standard Oil Co. of Ind.
W. G. Violette, Standard Oil Co. of Ky.
H. A. Wilkerson, Standard Oil Co. of N. Y.
L. B. McCammon, Transcontinental Oil Co.
M. G. Eitelman, Barnsdall Refining Co.
O. L. Cordell, Independent Oil & Gas Co.
E. S. Karstedt, Continental Oil Co.
Wiley Moore, Wofford Oil Co.
J. J. Johnson, Johnson Oil & Refining Co.
A. G. Maguire, Wadhams Oil Co.

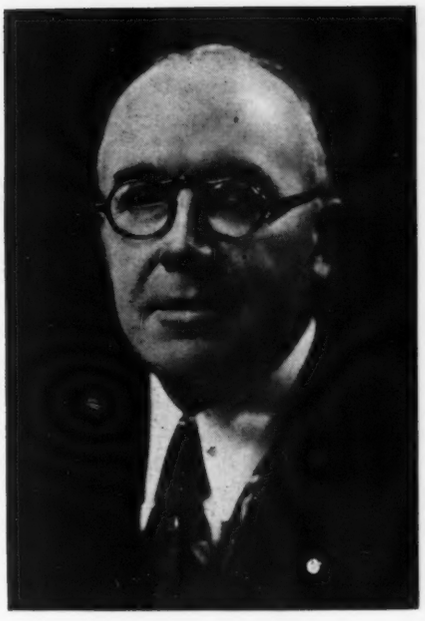
DIVISION OF PRODUCTION

General Committee:

Wm. N. Davis, Chairman, Phillips Pet. Co.
W. R. Boyd, Jr., Vice Chairman, A.P.I.
C. A. Young, Secretary, A.P.I.
F. A. Leovy, Gulf Production Co.
J. Edgar Pew, Sun Oil Co.
W. S. Fitzpatrick, Prairie Oil & Gas Co.
W. S. Farish, Humble Oil & Refg. Co.
L. P. St. Clair, Union Oil Co.
J. C. Van Eck, Shell Union Oil Co.
M. E. Lombardi, Standard Oil Co. of Cal.
E. J. Nicklos, Continental Oil Co.
R. Ogarrio, The Texas Co.
A. E. Watts, Sinclair Cons. Oil Corp.
E. J. Sadler, Standard Oil Co. of N. J.
Wirt Franklin, Wirt Franklin Oil Co.
E. T. Moore, Simms Oil Co.
R. W. McIlvain, Pure Oil Co.
R. S. MacMillan, MacMillan Petroleum Corp.
B. H. Stephens, Magnolia Petroleum Co.
R. A. Broomfield, Barnsdall Oil Corp.
C. C. Herndon, Skelly Oil Co.
R. S. Ellison, Midwest Refining Co.
H. V. Foster, Indian Terr. Ill. Oil Co.
W. M. O'Connor, Atlantic Refining Co.
O. D. Donnell, Ohio Oil Co.
D. S. Bushnell, Northern Group of Pipe Lines.
H. R. Straight, Empire Companies.
Edgar J. Marston, Texas Pacific Coal & Oil Co.

Brandli To Europe

TULSA, Jan. 11.—H. E. Brandli, vice president and general manager of the Cities Service Export Corp. of New York sailed Jan. 10 aboard the S. S. Bremen for a tour of England, France and Spain, where he will inspect the corporation's terminal and distributing facilities.



James E. Woodworth

Woodworth Now Treasurer Of Burford Oil Co.

TULSA, Jan. 11.—James E. Woodworth, formerly treasurer of the Marland Oil Co.'s Mexican subsidiaries, has been elected treasurer of the Burford Oil Co. of Pecos, Tex. He assumed his new duties Jan. 1.

Mr. Woodworth for a number of years was field statistician for the U. S. Department of Agriculture, with assignments in the states of Oklahoma and Colorado. He joined the former Marland company in 1919 as statistician and was assigned to the accounting department. He participated in a general survey of the petroleum industry under the direction of Earl Oliver and later was made assistant treasurer of the refining company. In 1920 he was transferred to Mexico, first as assistant secretary and treasurer and later was promoted to treasurer.

Plane Crash Fatal To Cliff Dillon

HOUSTON, Jan. 10.—Cliff N. Dillon, president of the Plains Lubricating Co., and four others, were killed Dec. 30 in the crash of a Texas Air Transport Co. plane at Amarillo. Other fatalities included Robert Moore, Amarillo service station owner; R. L. Allison, Amarillo tire company manager; Lieut. Robert H. Gray, formerly a British war ace and more recently Amarillo division manager of the Texas Air Transport Co.; and Lieut. Gray's 20-year old bride.

The plane slipped into a nose dive at an altitude of about 200 feet, turned over three times and plunged to the ground. Mr. Dillon died on the way to a hospital. Others were dead when spectators reached the plane.

Mr. Dillon was active in the affairs of the Texas Petroleum Marketers Association, of which he was Amarillo district vice president. He was also chairman of the Amarillo district code committee on marketing practice.

Buys Fort Scott Oil Co.

TULSA, Jan. 11.—The Mid-Continent Petroleum Corp. has bought the properties of the Fort Scott Oil Co. at Fort Scott, Kan. The properties consist of a bulk plant and four service stations in that city, a service station at Prescott, Kan., a bulk station and service station at Hume, Mo., and a bulk station and service station at Arcadia, Mo.

O'Byrne Made Vice President

EL DORADO, Ark., Jan. 11.—E. F. O'Byrne, formerly in charge of sales and traffic for the Lion Oil Refining Co. at El Dorado, has been made vice president in charge of sales for the Union Asphalt Co. of El Dorado, effective Jan. 1. Mr. O'Byrne succeeds T. E. Coale, resigned.

American Petroleum Institute report on refinery operations in the United States for the week ended Jan. 11, compared with the week ended Jan. 4

Districts	Per Cent of Capacity Reporting	Daily Av. Crude Run to Stills Wk. Ended Jan. 11 (Barrels)	Daily Av. Crude Run to Stills Wk. Ended Jan. 4 (Barrels)	Per Cent of Reporting Capacity Operated Wk. Ended Jan. 11	Per Cent of Reporting Capacity Operated Wk. Ended Jan. 4	Stocks Reported in Thousands of Barrels: Gasoline Stocks Jan. 11	Gasoline Stocks Jan 4	Gas & Fuel Oil Stocks Jan. 11	Gas & Fuel Oil Stocks Jan. 4
East Coast	100.0	456,300	455,000	75.3	75.1	6,359	5,998	7,626	7,431
Appalachian	91.8	75,700	75,600	64.4	64.5	1,333	1,282	806	805
Ind.-Ill.-Ky	98.6	310,000	289,800	87.3	81.6	5,784	5,483	3,528	3,505
Okla.-Kan.-Mo	88.6	294,300	263,500	71.8	65.0	3,731	3,604	3,192	3,277
Texas	90.7	546,800	539,900	77.5	76.5	7,139	6,590	13,073	13,757
La.-Ark	96.8	164,200	160,000	62.7	61.1	2,357	2,161	4,526	4,499
Rocky Mountain	93.0	54,000	41,600	39.0	30.0	2,307	2,273	1,016	973
California	99.3	601,500	642,900	67.5	72.1	14,731	14,826	110,284	109,770
Total U. S.	95.5	2,502,800	2,468,300	71.8	70.9	43,741	42,217	144,051	144,017
Texas (Gulf Coast)	100.0	436,500	429,600	82.9	81.6	6,142	5,579	10,263	10,792
La. (Gulf Coast)	100.0	101,400	108,500	68.7	73.6	2,059	1,877	3,691	3,818

Recovery in Oklahoma City Nears 10,000,000 Barrel Mark

Staff Special
OKLAHOMA CITY, Jan. 11.

IN THE little more than 13 months since the Oklahoma City field was discovered to be productive, the total yield has been nearly 10 million barrels. This figure is to and including Jan. 9.

With 69 wells in the status of producers—wells which have made some gauged quantity of oil—the field has estimated potential production of approximately 600,000 barrels of oil. Of this, the Indian Territory Illuminating Oil Co. and Foster Petroleum Co., operating jointly on many of the properties, plus partnership interests with other companies account for about half of the potential. The two companies have produced to their own account a total of 4,296,951 barrels. This does not include their share in partnership leases with other companies.

Total recovery for the field through the 24-hour period which ended at 7 a.m. Jan. 9 is shown in table at the right.

The star performer to date is the No. 1 Oklahoma City of the I.T.I.O.-Foster group. This was the discovery well of the field, coming in on Dec. 4, 1928. It has produced more than one million barrels of oil but is an indifferent performer now. The last gauge included in the accompanying cumulative total for this well was 398 barrels of oil and 1743 barrels of water. The previous day it made 650 oil and 3615 water. No benefit was realized from producing the well on gas lift. While the oil production was helped a little, a proportionate increase in water was effected and this has been the experience of one or two other water wells in the field.

The second biggest well from the standpoint of total recovery is the No. 1 Fuzzell, which to Jan. 9 had produced 941,614 barrels. It was completed Aug. 6, 1929. It promises to set a record that will be difficult to beat, as it exceeds 14,000 barrels a day when permitted to produce.

Performance estimates for the future and decline curves for the past cannot be set up in any comprehensive way because of the method of proration in use. Wells that have paid off the time penalties against them are opened five days and then closed in five days. Proration was started in the field Sept. 12, when a full 30-day shutdown was applied. At that time there were only 19 producing wells, 50 having been added up to Jan. 9.

Many of the wells listed in the table of cumulative recovery are not now authorized to produce and are shown as having made some quantity of oil in the 24 hours full production time allowed for purposes of completing. Not all of them use the 24 hours continuously but produce a few hours now and then until the credit is used up. Such a well, for example, is the Skelly Oil Co.'s No. 1 Hoopes, listed as having made 32,803 barrels. That was 24 hours' production, but was the total for six and seven-hour periods several days apart.

From time to time producing wells

Company	Well	Location	Total Recovery
Coline Oil	1-Olds	C SE NW 24-11-3	609,091
Coline Oil	2-Olds	C NE NW 24-11-3	24,901
Coline Oil	3-Olds	NW cor. 24-11-3	154,020
Coline Oil	1-Warren	SW SW SW 18-11-2	2,750
Coline Oil	2-Warren	NW SW 18-11-2	25,517
Cromwell-Franklin	1-Trosper	C SE NW 13-11-3	385,586
Cromwell-Franklin	3-Trosper	SE SW NE 13-11-3	2,801
Cromwell-Franklin	11-Trosper	SE SE SE 12-11-3	3,857
I. T. I. O.-Foster	1-B Anderson	NE NE NW 30-30-11-2	117,924
I. T. I. O.-Foster	2-A-Bodine	SW NE SE 24-11-3	244,391
I. T. I. O.-Foster	1-S. Bodine	NW cor. 30-11-2	101,315
I. T. I. O.-Foster	2-S. Bodine	SE NW NW 30-11-2	10,474
I. T. I. O.-Foster	1-Button	SW cor. 19-11-2	424,494
I. T. I. O.-Foster	2-Button	SW NW SW 19-11-2	326,178
I. T. I. O.-Foster	1-N. Emerson	NE NE SW 30-11-2	946
I. T. I. O.-Foster	2-N. Emerson	NW NW SW 30-11-2	2,415
I. T. I. O.-Foster	1-E. Joyce	NE cor. 25-11-3	1,930
I. T. I. O.-Foster	1-E. Fortson	SE SE NE 24-11-3	16,160
I. T. I. O.-Foster	2-F. Farley	NE cor. 24-11-3	44,529
I. T. I. O.-Foster	1-Foster	C NE SW 24-11-3	3,871
I. T. I. O.-Foster	1-Fuzzell	SW NW 19-11-2	941,614
I. T. I. O.-Foster	1-Johnson	NE NW 25-11-3	243,608
I. T. I. O.-Foster	2-Johnson	NW cor. 25-11-3	2,135
I. T. I. O.-Foster	2-Jennings	SW NE SE 13-11-3	46,194
I. T. I. O.-Foster	3-Jennings	SE NE SE 13-11-3	18,316
I. T. I. O-Foster	1-K. Henning	NE SW SE 24-11-3	138,071
I. T. I. O.-Foster	1-Okla. City	C SE SE 24-11-3	1,008,530
I. T. I. O.-Foster	1-Peterson	NE NE SW 25-11-3	21,915
I. T. I. O.-Foster	1-Speagle	SW cor. 24-11-3	1,298
I. T. I. O.-Foster	1-T. Fuzzell	SW SE SE 13-11-3	274,837
I. T. I. O.-Foster	1-Trosper	C NE SW 13-11-3	62,590
I. T. I. O.-Foster	2-Trosper	SW cor. 13-11-3	126,505
I. T. I. O.-Foster	3-Trosper	SE SE SW 13-11-3	8,627
I. T. I. O.-Foster	1-Verne	NW SW SE 13-11-3	19,337
I. T. I. O.-Foster	2-Verne	NE SW SE 13-11-3	33,049
I. T. I. O.-Foster	1-Watters	NE NW NE 25-11-3	30,921
I. T. I. O.-Foster	2-Watters	NW NW NE 25-11-3	3,054
I. T. I. O.-Foster	1-Wheeler	SW NW SE 13-11-3	12,660
I. T. I. O.-Foster	1-W. Canfield	SE SW 24-11-3	12,063
Mid-Kansas	1-Browning	SW SW NW 18-11-2	103,109
Mid-Kansas	1-Fortson	C SW NE 24-11-3	313,816
Mid-Kansas	2-Fortson	C NW NE 24-11-3	610,980
Mid-Kansas	3-Fortson	NW NW NE 24-11-3	
Mid-Kansas	4-Fortson	NE NW NE 24-11-3	3,242
Mid-Kansas	5-Fortson	SE SW NE 24-11-3	6,256
Mid-Kansas	1-Mollman	SE cor. 23-11-3	1,476
Prairie-Slick	1-Hiddleston	SW SW SE 19-11-2	419,108
Prairie-Slick	2-Hiddleston	SE cor. 19-11-2	85
Prairie-Slick	3-Hiddleston	SW NW SE 19-11-2	112,520
Prairie-Slick	4-Hiddleston	NW NW SE 19-11-2	15,815
Prairie-Slick	5-Hiddleston	NW SW SE 19-11-2	9,185
Shaffer-Hall & Briscoe	1-Childs	SE SE 14-11-3	405,849
Shell Pet	1-Petty	NW NW NE 30-11-2	608,390
Shell Pet	2-Petty	SW SW NE 30-11-2	4,699
Shell Pet	4-Petty	SW NW NE 30-11-2	1,218
Shell Pet	5-Petty	NW SW NE 30-11-2	4,208
Shell Pet	6-Petty	NE NW NE 30-11-2	432
Sinclair O & G	1-School	NE cor. 36-11-3	17,036
Sinclair O & G	1-Stamper	NE SW NW 30-11-2	439,169
Sinclair O & G	2-Stamper	SW SW NW 30-11-2	10,765
Sinclair O & G	3-Stamper	SE SE NW 30-11-2	51,554
Sinclair O & G	4-Stamper	NW SW NW 30-11-2	495
Sinclair O & G	5-Stamper	NE SE NW 30-11-2	340
Sinclair O & G	6-Stamper	NW SE NW 30-11-2	3,155
Sinclair-Amerada	1-Kinter	NW NW SE 30-11-2	73,133
Sinclair-Amerada	2-Kinter	SW SW SE 30-11-2	20,260
Skelly Oil	1-Hoopes	NW NW NE 31-12-2	32,803
Slick	1-Glidden	SW SW SE 13-11-3	415,060
Slick	2-Glidden	SE SW SE 13-11-3	
Slick	1-Zerkerle	NW NE NE NE 13-11-3	16,581
W. Franklin	2-Lowery	NE SW NW 12-11-3	446,670
Total			9,652,883

now completed enter into the status of wells authorized to produce half time, being divided into "A" and "B" classes. A rapidly mounting potential is in the immediate offing for there were as of the close of this week 55 wells drilling below 6000 feet, many of which had set and cemented the final string of pipe and were ready to drill in. The following table shows the status of the 184 drilling operations in the field, by companies.

Company	Rigs & Loc.	Less Than 2,000	2,000 to 4,000	4,000 to 5,000	5,000 to 6,000	Below 6,000
I.T.I.O.-Foster	7	9	16	3	22	38
I.T.I.O. & Cromwell-Franklin	....	1	1	....	3	3
Cromwell-Franklin	4	....	....	2	5	2
I.T.I.O. et al	....	....	2	....	1	....
Heenan & Coe	....	....	....	1	....	....
Wirt Franklin	2	....	....	....	6	1
Head Pet.	1	....	....	....	....	....
Coline Oil	3	2	2	1	3	5
Shell Pet.	....	....	....	....	1	2
Sinclair	....	....	5	....	....	....
Sinclair-Amerada	4	....	2	1	....	....
Mid-Kansas	1	1	....	....	....	....
Skelly	2	1	1	1	....	....
Skelly & Replogle & Johnson	1	....	....	....	....	....
T. B. Slick	3	....	....	....	1	1
Slick & Anderson & Prichard	....	1	1	2	....	....
Prairie & Slick	....	....	....	....	1	3
Mid-Texas Pet.	1	....	....	....	....	....
Hall & Briscoe	1	....	....	....	....	....
	30	15	30	11	43	55

Production of Gulf Coast Crude Above Market Demand

(By Telegraph)

HOUSTON, Jan. 12.

PRODUCING operations in Gulf Coastal and central south Texas areas are now holding the interest of operators concerned with the mounting tide of Texas production. Coastal crude oil production last week set a new high record of daily average production, exceeding 190,000 barrels in south Texas and south Louisiana salt dome territory. In the Luling Fault zone division of central south Texas the Darst Creek field was producing approximately 17,000 barrels daily.

Notwithstanding the 50 odd drilling wells and active locations in the Darst Creek field, that territory probably can be kept below 20,000 barrels daily exploited production.

The only oil being handled outside the 15,000 barrels accounted for by major pipeline interests in conformity with prorating practice is the crude produced by L. C. Turman, of Fort Worth, and sold under contract to the Grayburg Oil Co. of San Antonio. This now amounts to less than 2000 barrels daily, and is not expected to increase greatly.

Another factor limiting Darst Creek influence on production is the appearance of water and basic sediment in quantities ranging from one to five per cent. In the case of the Miller well of the Trinity Drillers, Inc., the percentage of encroachment reached 20 per cent. The Humble Oil & Refining Co.'s No. 2 Denman, which checks structurally as one of the two highest wells in the field, is making one and a half per cent water and sediment. Magnolia Petroleum Co.'s No. 1 Peter Klein well, three quarters of a mile west of the Trinity Drillers completion, is making five per cent water.

No detailed water report on the field is yet available, but conditions in wells scattered throughout the producing territory indicate that encroachment will cut down potentials materially from the estimated open flow maximums, and hasten the necessity for dehydrating Darst Creek oil early in the field's life.

Fully 75 per cent of the 190,000 barrels daily production from salt dome fields in Coastal Texas and Louisiana classifies as high gravity oil which has recently become a drug on the market. Owing to the many fields involved in Gulf Coastal territory and the small acreage on diversely held salt dome structures it is virtually impossible to consider any form of prorating to solve production problems.

Instead, virtually all purchasing agencies are notifying producers of high gravity oil that from now on they will take only such quantities of this grade as market demands necessitate. This means in most cases that no new connections are being made and that a sharp curtailment in Gulf Coastal drilling may be expected.

In the Girvin district of West Texas a fourth producing horizon has been found in the Taylor-Link Oil Co.'s No. 6 University test in Sec. 13 Block 16. At a total depth of 1730 feet the well tested 612 barrels daily maximum. Other producing horizons range from 900 to 1600 feet plus in the Girvin district.

Brave Storm to Discuss Plugging Wells

EL DORADO, Jan. 10.—In spite of a sleet storm and freezing weather, a few hardy members of the El Dorado field chapter of the American Petroleum Institute Division of Production turned out for the regular monthly meeting held Jan. 7, at Oil Hill.

Hal Smith, former State Oil & Gas Inspector, led a brief discussion of oil well plugging. He spoke in place of the scheduled Frank Leornard, present Inspector, who was unable to attend on account of the weather.

Plugging, said Mr. Smith, is for the purpose of preventing migration of water to the wells or to other horizons. The state requirements for Kansas call for oil horizons to be plugged with sand and wood plugs, or rock cuttings and wood plugs. The hole must be cleaned from top to bottom before plugging is started.

The protection of surface water from sub-surface salt water was stressed. It was urged that the hole be bridged above the first salt water and filled tightly to the surface to prevent rain from floating salt water or oil scum to the surface.

The possibility of using some holes which at first might seem ready for plugging as repressuring wells was suggested.

Tulsa Geological Society Elects New Officers

TULSA, Jan. 11.—Frank R. Clark, chief geologist of the Mid-Kansas Oil & Gas Co., was elected president of the Tulsa Geological Society at the first meeting of the year held Jan. 6. Assisting him will be Ira Cram, paleontologist of the Pure Oil Co., as first vice president, T. E. Weirich, chief geologist of the Tidal Oil Co., as second vice president and E. A. Markley, geologist of the Barnsdall Oil Corp., as secretary and treasurer.

The newly elected members of the council are, C. L. Severy, consulting geologist, George S. Buchanan, chief geologist of the Tulsa Oil Co. and L. G. Keppler, chief geologist of the Foster Oil Co. A. I. Levorsen, as retiring president, automatically becomes a member of the council.

Review of Late Production News

OKLAHOMA led all states in the amount of gain in its crude output the past week, resulting in an increase of 36,950 barrels in daily average production for the country, which went to 2,689,250 barrels the week ended Jan. 11, according to the American Petroleum Institute.

Oklahoma produced 707,550 barrels daily average, a gain of 31,650 barrels. Of that amount, the Earlsboro field gained nearly 19,000 barrels; Allen 4750 barrels; Little River 4700 barrels; Seminole 3600 barrels, and Bowlegs about 2650 barrels.

Crude oil imports rose 61,430 barrels, to 266,860 barrels daily average. This brought total new crude supply to 2,956,-110 barrels for the week ended Jan. 11, an increase of 98,380 barrels over the previous week.

Barber's Hill in coastal Texas gained 6950 barrels. Gray county in the Texas Panhandle declined 6300 barrels, and Pecos county 2750 barrels. Winkler county gained 2000 barrels.

Salt Creek production fell 7200 barrels.

Among California fields, Santa Fe Springs showed largest change, a decrease of 4000 barrels taking place there. Midway-Sunset also fell 2000 barrels. Kettleman Hills gained 2400 barrels.

California

VENTURA AVENUE operators have adopted a cut and try method for curtailing that field's oil and gas production. Oil production is to be cut to 50,000 barrels per day until Jan. 15, after which some new methods may be suggested. If this cut does not eliminate gas wastage by reducing production to 160,000,000 cubic feet per day, operators will curtail oil still further in proportion to size of production and location on structure.

Completion of new wells at Santa Fe Springs is expected to raise production to over 175,000 barrels daily by the end of this week. The yield Jan. 12, was placed at 161,000 barrels. Thirty-seven wells are to be completed between Jan. 15 and Feb. 1, and 21 wells between Feb. 1 and 15.

The technical committee selected to determine percentage of sale value of oil produced from four wells which are allowed to produce on the north dome of Kettleman Hills under agreement to be distributed among remainder of permit holders on north dome is reported at a deadlock.

Petroleum Securities' Felix No. 1 further complicates the situation on the north dome and it is rumored that a cooperative plan of unit development may be substituted for the conservation agreement as production in this area cannot be restrained following completion of the Felix well. Judge E. D. Reiter, chairman of the Kettleman Hills committee states that if Continental Oil Co., and other permit holders near the Felix well are not allowed to start drilling offsets, great injustice will be done.

Current production in this country by pools is found on page 81.

Continental now should be drilling at least two offsets to the Felix well, but cannot because of its agreement with the Department of the Interior. Holders of fee land are under no obligation such as is hampering permit owners and cannot be expected to restrain drilling after the Felix is completed.

Oklahoma-Kansas

INCREASING production in the Oklahoma City pool, where new wells were completed, and old wells deepened and increased was the feature of the week in Oklahoma. The rest of the state was not entirely inactive, though, and the work in the edge pools of the general Seminole area continued.

Proration was finally applied to the Konawa pool, the new Gilcrease sand play south of Little River. Twenty-eight locations had been made, based on the sterling performance of the three wells completed so far in this shallow pay.

A well good for about 60 barrels an hour was completed in Noble county by the Magnolia Petroleum Co. It is in what is believed to be the Misener sand. It drilled five feet of the pay, with the bigger part of the oil coming from the bottom three feet. The tools were still in the sand when drilling was stopped.

A new well was added to the northeast corner of the Finley pool in Gray county, Texas Panhandle, and an extension completed some weeks ago was shut in for an indefinite period. The proration cut was increased to 35 per cent in this area.

No wells of importance were reported from Kansas during the week.

Texas, New Mexico, Louisiana

APPEARANCE of one to five per cent water with the oil produced in wells of the Darst Creek field of the Luling fault zone, central south Texas, has indicated that that daily average yield would never have attained the high estimates previously made for the territory, even without present prorating practice. The field has been allowed to produce approximately 15,000 barrels daily since Jan. 1, when exploitation of the previously completed 20-odd wells was begun. Increased potential production may be expected from future completions, but the present encroachment calls for early use of dehydrating methods for handling the oil.

Andrews and Ector county give promise of increasing development in the West Texas salt basin region this year. Completion of a second flowing well in the Block 44 area of Ector county is considered to forecast development of an important sulfur crude field. The recent Andrews county discovery of a 200-barrel well continues to be regarded also as of important future bearing.

Occasional new wells in the southeastern Lea county, New Mexico division of the Permian salt basin are of no outstanding significance except to their individual owners. The best current completion is that of Continental Oil Co., on state land, in 1-21S-33E, which pumped 420 barrels in 24 hours at 3783 feet.

Until tests under way in the Zwolle district of northern Sabine parish get down to pay levels at about 2400 feet no developments of outstanding interest may be expected in North Louisiana.

Group Three Refiners Prepare to Fight New Threat to Freight Rates

By Allen S. James
N. P. N. STAFF WRITER

TULSA, Jan. 11

COMPLAINTS now before the Interstate Commerce Commission attacking freight rates on petroleum products in much of Western Trunk Lines territory have created a feeling almost of apprehension in the Mid-Continent.

So strong is the potential threat that the entire Mid-Continent rate structure will become involved, that a group of executives of refining companies has named a committee to work with a sub-committee of traffic men in outlining what action, if any, will be taken by refiners in this district with reference to the cases filed.

This action was taken at a meeting of executives and traffic men from Kansas and Oklahoma companies Jan. 7 in the assembly room of the Mid-Continent Oil & Gas Association. The meeting was called by W. C. Franklin, vice president and general counsel for the Tidal Oil Co. The meeting was attended by 25 or more executives and traffic men. Mr. Franklin was chosen chairman of the meeting, and also was named chairman of a committee of executives which he was to appoint.

The committee appointed by Mr. Franklin is composed of F. A. Pielsticker, vice president, Skelly Oil Co., Eldorado, Kan.; J. C. Denton, vice president, Mid-Continent Petroleum Corp., Tulsa; L. R. Crawford, president, Producers & Refiners Corp., Independence, Kans., who will serve as a representative of Wyoming executives; Roy B. Jones, president, Panhandle Refining Co., Wichita Falls, Texas, and John H. Kane, vice president, Phillips Petroleum Co., Bartlesville.

The traffic committee which will act in an advisory capacity is composed of H. W. Roe, traffic manager for the Mid-Continent Petroleum Corp.; A. C. Holmes, traffic manager for the Empire Refineries Inc.; A. F. Winn, traffic manager for Skelly Oil Co.; C. R. Musgrave, traffic manager for Phillips Petroleum Co.; and C. F. Dowd, traffic manager for Tidal Refining Co.

The cases which have caused the most concern are those filed by the Standard Oil Co. of Indiana, Docket No. 22714, Wyoming Public Service Commission, Docket No. 22733, and the Independent Oil & Gas Co. of Tulsa, just filed and not yet assigned a docket number.

The Standard has attacked the relationship of rates from Casper, Wyo., to points in North Dakota, South Dakota, Iowa and Minnesota, to those from Group 3 to the same points. The brief was filed Sept. 14.*

Traffic men in Tulsa apparently are of the opinion that the Standard will not get very far with its complaint since the door already has been closed twice in the company's face. The Mid-Continent refiners, nevertheless will be dragged into the hearing.

The Independent's complaint was filed Jan. 4. The brief cites rates from Kansas City to Western Trunk line territory as being excessive. No other groups are mentioned by way of relationship and the company does not ask reparation.

The possibility seen by many traffic men in the Mid-Continent is that they will be drawn into the Independent case in one way or another, if not of their own volition, then through intervention of other groups, and that, before the matter is settled, the Commission might consolidate all the complaints, which would develop a situation as bad if not worse than the Mid-Continent Rate Case, 1925.

It will be recalled that the case originated with Kansas City refiners. Before it was settled every group in the Mid-Continent had become involved. The decision in the case met with universal disapproval. Each group of refiners felt that it had not obtained its rights, and had been to considerable expense in fighting the issues. It was estimated that the case cost close to half a million dollars, with the shippers paying slightly more than half this cost.

If the commission should see fit to consolidate the cases now pending virtually the same issue would be involved as in the Mid-Continent Rate Case.

The committee headed by Mr. Franklin probably will meet some time next week with officials of the Independent Oil & Gas Co. to discuss the complaint filed. The Independent was represented at the Jan. 7 meeting. These representatives advised that the company would request the I. C. C. to withhold assignment of docket number for a few days until the committee had an opportunity to go over the entire matter with the company. It was made clear by the company's representatives that the Independent had no desire to start a general rate squabble, and that while it was felt the complaint in their case was warranted, they nevertheless would be more than glad to discuss all phases of the matter with the committee before proceeding further.

The first intimation of the Independent Oil & Gas Co.'s action was made known several days ago at a meeting of refinery traffic men called to discuss what action would be taken in the Standard case. Independent representatives at that time stated that the company was contemplating the filing of its complaint. The situation was deemed of sufficient importance by the traffic men to request a meeting of the executives to acquaint them with its possibilities.

(*NATIONAL PETROLEUM NEWS, Nov. 6, 1929, page 72.)

New Natural Gasoline Rates to East

WASHINGTON, Jan. 13.—New rates on natural gasoline, some up and some down, are to be put into effect from production points in Kansas, Oklahoma and Texas, not later than March 17, on account of a decision by the Interstate Commerce Commission in the case of Tidal Refining Co. et al. vs. Santa Fe et al.

The decision also covered complaints made by Chestnut & Smith, Texas Pacific Coal & Oil Co., Phillips Petroleum Co. et al., three complaints by the Skelly and three by the Carter Oil Co.

The revision of rates is to the whole territory east of the Mississippi. Not all points to which natural gasoline might be sent into that part of the country are named but the typical ones are named and specific rates have been ordered to them.

The regulating body revised earlier opinions as to the level of rates. It decided that the rate to Olean, N. Y. should be raised from 61 to 63 cents per 100 pounds and that to Savannah, Ga. from 58.5 to 63 cents. The lower rates were put into effect as a result of litigation by Chestnut & Smith.

High Anti-Knock Gasoline Produced From Pennsylvania Gas Oil

By Gustav Egloff and Edwin F. Nelson*

ONE of the latest outstanding developments in the cracking process is the production of motor fuel of 50 per cent benzol equivalent by the conversion of Pennsylvania gas oil at relatively low temperatures and pressures.

It is well known that straight run gasolines from Pennsylvania, Muskegon, Michigan or other paraffinic crude oils, are highly knocking during combustion in a motor. It is generally believed that cracking gas oil or fuel oil from paraffinic crudes will yield motor fuel of low knock rating unless one cracks at high temperatures under so-called vapor phase conditions.

This belief is erroneous. Pennsylvania gas oil of 38-40 A.P.I. gravity is being converted commercially at a comparatively low temperature, 925 F., and pressure of about 285 pounds into yields of over 65 per cent gasoline having an average knock rating of fifty per cent benzol equivalent.

The quality of the cracked Pennsylvania gasoline thus produced is equal or superior to premium gasolines which sell from three to four cents a gallon above regular prices.

This is shown by a study made of twenty premium gasolines purchased from filling stations, and their knock rating determined in a Delco engine. Twelve of the gasoline samples contained an antiknock chemical of a well known brand. Their knock ratings, expressed in terms of per cent benzol in admixture with Pennsylvania straight run gasoline, varied from 45 to 53 per cent. Two of the gasolines were vapor phase cracked products which showed knock ratings of 49 and 50 per cent benzol equivalent and the price premium was 3c to 4c per gallon.

The runs tabulated below show the results obtained with two commercial units cracking Pennsylvania gas oil to gasoline having a knock rating of 47 to 53 per cent benzol equivalent.

Cracking Unit	Run No.	Benzol Equivalent Per Cent
No. 1	103	50
No. 1	104	47
No. 1	105	53
No. 1	106	50
No. 2	105	51
No. 2	106	51
No. 2	107	51
No. 2	108	50
No. 2	109	51

The light gas oil used during these operations gave the following analysis by the A.S.T.M. method.

A. P. I. Grav.	38.4
I. B. P.	346 F.
Per cent distilled over	°F.
5	436
10	464
20	493
30	520
40	544
50	578
60	614
70	640
80	679
90	716
End Point	758
Recovery, per cent	97

*Universal Oil Products Co.

THE accompanying article gives the details of operation of a Dubbs unit when cracking a Pennsylvania charging stock. Results of treating the pressure distillate from the unit are also given and the detonation and gum-forming tendencies of the motor fuel produced are shown. It is understood that these results were obtained in actual practice in a Pennsylvania refinery in current operation of the plant.

Study of the details of the operation indicate that pressures used are slightly higher than those used in many places for similar units, the latter running in most cases at pressures in the neighborhood of 200 or less to 250 pounds. The difference, however, is not great, and it appears possible that such an installation may aid materially in solving the Pennsylvania refiner's problem of manufacturing a higher antiknock gasoline from his crude. No statement is made regarding the amount of recycling done to obtain the benefit of secondary cracking reactions.

For the small refiner who has only a few hundred barrels per day of suitable cracking stock, insufficient in amount to run a large installation, the article to be printed soon in these pages regarding the small Belgian cracking installation may be of particular interest.—A.L.F.

The gas oil was cracked at the rate of 1400 barrels per unit per day. The yield of gasoline was over 65 per cent based on a once throughput of the cracking stock. The average benzol equivalent of the cracked motor fuel of 425 F. end point, produced during a month's commercial operation, was 50 per cent.

Operation of the Cracking Process

The cracking units which operated on the Pennsylvania gas oil consisted of furnaces each containing 72 steel tubes, four inches in outside diameter with quarter-inch walls. The heating tubes were 30 feet long and interconnected with return bends having plugs opposite each tube opening. The reaction, expansion of vaporizing chambers were ten feet in diameter, 40 feet high and had walls 2½ inches thick. The dephlegmators were four feet in diameter and 43 feet 6 inches high. Each cracking unit was equipped with hot oil surge pumps, charging stock pumps, recirculating pressure distillate pumps and instruments to record the temperatures and pressures.

The diagrammatic flow chart and two photographs illustrate the apparatus for carrying out the cracking process. The gas oil was pumped from storage into the fractionating tower so as to condense the heavier vapors therein and raise the temperature of the incoming oil. The charging stock mixed with condensed vapors, was pumped, by means of a hot oil surge pump, through the heating coil in the furnace wherein the temperature was raised to 925 F.

The heated oil passed through a transfer line into an insulated steel jacketed chamber where the coke produced by the cracking reaction accumulated, while the vapors passed through a pipe connection to the bottom of the dephlegmator. The distillate vapors passed from the top of the dephlegmator to and through a water cooled condenser, and then as a condensate into a receiver.

To control the temperature at the top of the dephlegmator, a portion of the pressure distillate was recirculated, the quantity being regulated according to the quality of the cracked vapors desired. The cracked oil was passed into a gas separator, where the dissolved gases were

evolved by reduction of pressure from about two hundred pounds in the receiver to thirty pounds.

The pressure control of the cracking system was maintained by a valve on top of the distillate receiver, by allowing the escape of excess incondensable gas. The pressure distillate, largely degassed, flowed from the separator to storage.

The gas from the top of the separator was treated by an oil absorption system to recover gasoline therefrom, of which the gas contained about one gallon per thousand cubic feet. The gas leaving the top of the high pressure distillate receiver was used in different parts of the refinery as fuel.

Continuous Refining of Pressure Distillate

The pressure distillate produced by the cracking process was chemically treated in a continuous manner with sulphuric acid, caustic soda and water. This distillate was pumped through a mixer fitted with baffle plates, at the rate of 2200 barrels per eight hour day, wherein it contacted with acid in the proportion of one and one-half pounds of 66 degree acid per barrel of oil. It then passed to acid settling tanks.

The acid sludge settled out in the two tanks and was drawn off to storage, ultimately to be regenerated. The acid treated pressure distillate passed into another tank, flowing counter to a water spray. The washed pressure distillate passed to a settling tank where the water was drawn off from the bottom. The distillate flowed into a series of mixing columns, contacting with 6 degree Baume caustic soda solution at the rate of 0.08 gallons of caustic soda per barrel of cracked distillate.

The mixture of caustic soda and pressure distillate passed into a settling tank from the bottom of which the spent caustic soda was drawn and passed into storage. The treated pressure distillate was fed to another tank, flowing counter to a second water spray. The finished chemically treated pressure distillate passed to a storage tank.

Distillation of the Chemically Treated Pressure Distillate

The chemically treated oil was subjected to distillation in a pipe still and bubble tower unit, to produce gasoline and pressure distillate bottoms. The flow chart of the apparatus is shown. The chemically treated pressure distillate was pumped through heat exchangers connected to the pressure distillate bottoms draw-off line from the base of the tower and vapor line from the top of the bubble tower.

The cracked distillate was raised in temperature by the heat exchangers to approximately 240 F., and passed through a pipe coil in the radiant section of the furnace where its temperature was increased to approximately 380 F.

The heated pressure distillate passed from the pipe coil, into the bubble tower. Here it was fractionated into gasoline vapors and pressure distillate bottoms.

The gasoline vapors passed from the top of the tower to a double pass vapor heat exchanger and water cooled condenser, and then to storage. The temperature of the gasoline vapors leaving the bubble tower was closely controlled by pumping a portion of the end point gasoline through a spray device at the top so as to produce a finished 425 F. end point gasoline.

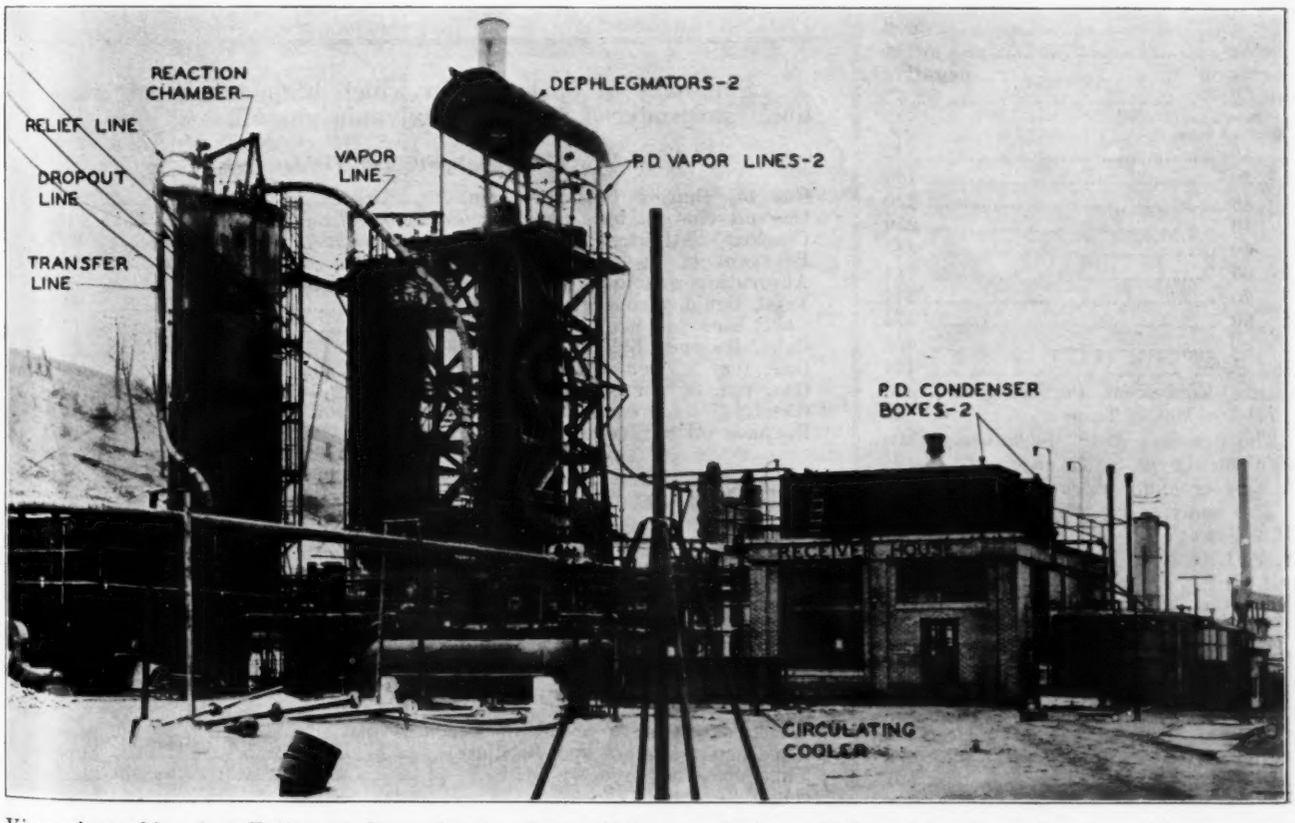
The uncondensable gas from this operation was collected from the storage tank and passed to an absorption system to recover its gasoline content. From the bottom of the bubble tower, the pressure distillate bottoms passed through a heat exchanger and to a storage tank.

A portion of pressure distillate bottoms was pumped through a separate heating coil acting as a reboiler, in order to improve the fractionation and yield of motor fuel from the pressure distillate oil. Steam was injected into the bottom of the tower to act as a refining agent and by its partial pressure cause the pressure distillate to distill at a lower temperature.

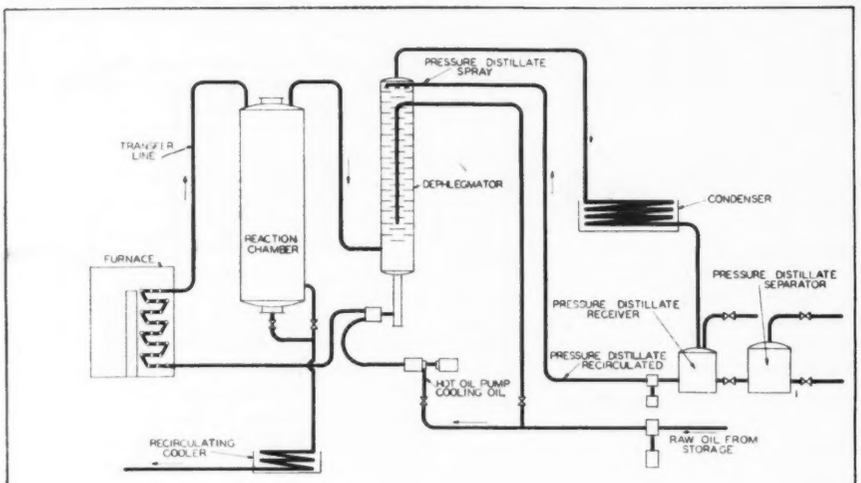
The pressure distillate was analyzed by use of a Hempel column. The data follows:

Cracked Distillate

A. P. I. Grav.	54.5
Init. B. P.	78.F.
Per cent distilled over	**°F.**
10	154
20	194



View of cracking installation at Pennsylvania plant which is producing a high anti-knock gasoline from Pennsylvania gas oil



Flow sheet of Dubbs plant operating on Pennsylvania gas oil

30	236
40	279
50	323
60	360
70	398
80.5	430

The cracked gasoline after treating and rerunning of the pressure distillate passed all market specifications and analyzed as follows:

Finished Gasoline

A. P. I. Grav.	59.1
Gums (mgs.)	
.....0 (glass dish) 20 (copper dish)	
Color	30
Odor	good
Doctor	sweet
Corrosion	negative
Init. B. P.	82 F.

Per Cent distilled over	°F.
10	142
20	180
30	220
40	250
50	284
60	314
70	344
80	374
90	406
End Point	424

Benzol Equivalent Per Cent..... 50.0 (Delco Motor Test)

The pressure distillate bottoms have high utility as a furnace oil, Diesel oil or recracking stock.

The analysis by the A.S.T.M. method follows:

A. P. I. Grav.	38.4
Init. B. P.	429 F.

Per Cent distilled over	°F.
10%	452
20	456
30	463
40	469
50	478
60	490
70	501
80	560
90	575
End Point	655

Conclusion

1. It has been shown that in commercial practice high temperatures are not necessary to produce anti-knock motor fuels of 50 per cent benzol equivalent.

2. It has been shown also that high temperatures and pressures are not necessary to produce yields of motor fuel of over 65 per cent from refractory cracking stocks such as Pennsylvania gas oil.

3. The volume of gas produced per barrel of charging stock or gasoline is low, being 530 and 779 cubic feet respectively.

4. The cracked distillate is simple to treat to market specification gasoline, requiring only one and one-half pounds of sulfuric acid per barrel. The treating and rerunning losses to produce finished gasoline are 2 per cent based upon the gas oil charge.

5. The finished gasoline passed all market specifications and was low in gums. The gum tests showed zero milligrams by the glass dish and twenty milligrams by the copper dish method.

Vacuum Oil to Promote Executive Officers

CLEVELAND, Jan. 13.—Revision of the corporation structure of the Vacuum Oil Co. is to be sought at a meeting of stockholders Feb. 3 in New York. If proposed changes are voted George P. Whaley, present president, will be elected chairman of the board; Herbert Baker, now vice-president and treasurer, will be elected vice-chairman, and Charles E. Arnott, at present a vice-president, president.

The present by-laws call for a board of eight members but the number authorized is to be changed from not less than seven nor more than 15. A larger number is wanted because of the growth in the company's business, Mr. Whaley has written stockholders.

Summary of operation in which high anti-knock gasoline was produced from Pennsylvania gas oil.

1. Throughputs and Yields

Gas oil charge, bbls. per run	5583
Gas oil charge, bbls. per day on stream	1410
Cracked distillate, bbls. per run	4589
Per cent of gas oil cracked	82.2
Absorption gasoline, per cent of gas oil cracked	1.8
Total liquid recovery, per cent	84.0
Coke, tons per run	75.6
Coke, lbs. per bbl. gas oil cracked	27.1
Gas, (cu. ft. per bbl. of gas oil)	530
Gas, (cu. ft. per bbl. of gasoline)	779
Gasoline (total commercial recovery) per cent of charge	68.0
Furnace oil per cent of charge	14.0

2. Operating Conditions

Reaction chamber pressure, lbs. per sq. in.	285
	Temperatures °F.
Transfer	925
Vapors entering dephlegmator	865
Reflux	800
Vapors to condenser	510
Furnace (above tubes)	1550
Furnace (below tubes)	1050

3. Operating Cycle

Time from fire to producing cracked distillate	2 hours
Time producing cracked distillate	104 hours
Time cleaning pressure still	14 hours
Complete cycle	120 hours
Per cent of time producing cracked distillate	86.7

Sun Oil Co. to Build 550 Mile Line To Pump Gasoline West

PHILADELPHIA, Jan. 10

THE Sun Oil Co. is starting preliminary work on a 550-mile pipe line, with two main branches, to carry gasoline west from its refinery at Marcus Hook. The line may eventually be extended to hook up with its inland refinery at Toledo, Ohio.

This is the second gasoline pipe line project proposed to transport this product inland from the eastern seaboard, to offset what are regarded as high rail rates for this haul. A few weeks ago the Standard Oil Co. of New Jersey announced it was completing arrangements to pipe gasoline west from Bayway, N. J., through the old Tuscarora Pipe Line Co.'s line originally laid to carry crude east to refineries at seaboard.

For practically a year, also, the Atlantic Refining Co. has been pumping West Texas crude west through another of the old system of crude oil pipe lines, from Point Breeze, on seaboard near Philadelphia, to its inland Pennsylvania plants at Pittsburgh and Franklin.

The Sun Oil Co. project includes a new line laid for the particular purpose of moving gasoline west over the mountains. It will be a common carrier line, according to J. N. Pew, Jr., vice president of the Sun Oil Co., and will pipe gasoline for any companies offering it for transportation. Mr. Pew said the rates would be about the same as announced by the New Jersey Standard for its gasoline pipe line system, which are a considerable saving under rail rates to inland Pennsylvania.

One of the two main branches of the Sun Oil Co. line will run to some point on the New York barge canal, somewhere in the vicinity of Binghamton. The other line will run to Pittsburgh and may be extended beyond into Ohio and may still later be extended to reach Lake Erie, perhaps at Toledo, which would give the company a pipe line hook-up between its two refineries.

The line is to be entirely a welded line, mostly six-inch, Mr. Pew stated, and is expected to cost in the neighborhood of $5,000,000. It will have a capacity of about 15,000 barrels a day. It is planned to build short lateral lines, off the two main branches, to important distributing centers not on the direct route of the main line.

This is the first gasoline pipe line to be constructed for anything like this distance. W. C. Kinsolving, company engineer in charge of its construction, stated that an aerial survey would be started within a month to determine the best route from Marcus Hook to Harrisburg, Pa.

Approximate route of the Sun Oil Co's. two-branch pipe line as sketched by National Petroleum News. The definite plan to build to Pittsburgh gives the company access to supplemental water transportation from that point. Possible extension of one branch to the barge canal in New York would give it another outlet on water. Another possible extension is to Lake Erie

A feature of pipe line construction will be the use of centrifugal pumps at the booster stations, in place of reciprocating pumps. This will make it possible to keep the gasoline in the pipe line the entire distance it is transported, in place of pumping it from one division of the line into tanks and then from this storage into the next division, as is present general practice with reciprocating pumps. The use of a welded line and centrifugal pumps at booster stations will reduce losses to a very small factor, Sun Oil Co. officials believe.

The line will operate at a pressure of about 750 pounds. Its greatest elevation will be 2850 feet above sea level, reached between Altoona and Johnstown, Pa. An automatic or semi-automatic system of operating the booster stations may be installed, according to Mr. Kinsolving.

The Sun Oil Co. has formed the Susquehanna Pipe Line Co. to operate the gasoline pipe line and has applied to the Public Service Commission of Pennsylvania for a certificate of public convenience which permits it to store and transport both crude and refined products.

An accompanying sketch has been prepared to give a general idea of the probable scope of the pipe line system with water connections through central New York on the barge canal. Since the line has not been surveyed and its location not definitely fixed the sketch, of course, does not pretend to be accurate.

Fire and Safety Men To Meet Jan. 24

CLEVELAND, Jan. 11.—Program for the annual meeting of fire and safety marshals of the National Petroleum Association to be held at the William Penn hotel, Pittsburgh, Jan. 24 has been announced by Fayette B. Dow, general counsel.

Opening talks will be made by James H. Herbert, president on the fire and safety marshals; E. M. Lyons, association president and R. A. Wotowitch, trustee of the association in charge of the fire and safety department.

Following will be reports of group chairmen. Fred Mulhaupt will report for the Bradford group, Robert M. Downing for the Oil City group, Robert F. King for the Pittsburgh group, Sherman Brown for the Warren group and M. D. Manz for the West Virginia group. Discussion will center on fires and unusual accidents experienced and recommendations for prevention as well as group activities.

Franklin L. Newcomb of the Standard Oil Development Co., is to address the meeting on "Fire Hazards and Fire Prevention." H. N. Blakeslee of the National Safety Council, will speak on the subject "Safe Practices Prevent Fires." Officers will be elected at the meeting and a luncheon served.

Ector Area Getting First Attention Of Two New West Texas Fields

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Jan. 9

COMPLETION of a second flowing oil well in the Block 44 area of southern Ector county has assured West Texas of another important field development in 1930.

When the first flowing well of the area was completed for 380 barrels, initial production, last October, a more important aspect was assumed by a general territory where previous completions had made oil in non-commercial quantities.

It was with widespread interest, therefore, that the producing industry watched for completion of the south offset to the October completion. That well, finished by Humble Oil & Refining Co., early in the present week, flowed 495 barrels at total depth of 3785 feet, top of the lime pay 3755 feet.

The second completion, in the center of the north line of Sec. 16, block 44, Twp. 3-south, Texas & Pacific survey, was drilled to greater depth than the "discovery" well to the north. It had the main pay at 3738-3744 feet; possibly accounted for by crooked hole conditions.

The original well was drilled by the Penn Oil Co., of Dallas, in partnership with Atlantic Oil Producing Co., on acreage sub-leased from Humble Oil & Refining Co. Robert R. Penn of the Penn Oil Co., had obtained a one-third working interest from the Humble on a six section block of Texas Pacific Land Trust acreage in consideration of the drilling of a well. He thereupon split his "bet" with the Atlantic, giving that company and Penn thereafter a one-sixth working interest each. After the first well the Humble took over field operations on the property, drilling the second test.

Because of the non-commercial caliber of three wells drilled several years ago by The Texas Co., and the J. S. Cosden interests, three and a half miles southwest, in Sec. 13, Block B-16, the disposition of operators was to await completion of a second well before getting "too enthusiastic" over the Block 44 area.

One producing well in a new field of the Permian salt basin, sulfur oil region, may be invariably considered significant. In the past, at least, the completion of two good wells has always resulted in development of an important field. Such is now the outlook, with principal attention directed to drilling west and southwest of the Humble-Penn-Atlantic wells.

Four other tests are now under way in the area, two each by the Landreth Production Co., and the Cosden Oil Co., Inc., and all on long strips of University of Texas land lying between the flowing oil development, on the east, and the Texas-Cosden partnership wells previously mentioned.

Parenthetically, some of the wells and probably others to be drilled in the future, are certain to add to the royalties of the University of Texas, which at the end of December had $13,252,519 to its credit from oil produced in fields where it holds state lands. All such royalties accruing to the University of Texas go into its permanent fund, the interest from which only may be spent.

A fifth test now under way in the Ector area by the Llano Oil Co. is east of the field and may be considered of wildcat character. It is drilling on T. S. Hogan acreage.

The flowing wells of the Humble-Penn-Atlantic partnership are shown in field reports as the No. 1 Kloh discovery and the No. 1 York, south offset. The Kloh has surface elevation of 2925 feet, found the top of the salt formation of the Permian basin at 1230 feet, top of brown lime 3246 feet, top of white lime 3410 feet. The York, surface elevation 2921 feet, logged top of salt at 1245 feet, top of brown lime 3275 feet, top of white lime 3430 feet.

DRILLING wells on University land to the southwest, so far, have logged as follows: Landreth Production Co., S-1 University, elevation 2894 feet, top of salt 1080 feet, top of brown lime 3115 feet; T-1 University, elevation 2871 feet, top of salt 1215 feet; Cosden Oil Co., Inc., A-1 University, elevation 2914 feet, top of salt 1055 feet; B-1 University, elevation 2980 feet, top of salt 1095 feet.

In the Block 16 area, where three non-commercial oil wells were completed by The Texas Co., in partnership with the J. S. Cosden interests, and where three dry holes were also finished two or three years ago, surface elevations range from 2842 to 2876 feet. In most cases salt tops were found at depths of 860 to 950 feet. Pay was at the 3465 to 3495 foot levels.

In Andrews county, where another deep salt basin field is in the making, the Deep Rock Oil Co.'s No. 1 Ogden test, in Sec. 6, Block A-46, is now producing about 200 barrels daily of cut oil at 4428 feet. This previously reported well is in wildcat territory east of Lea county, New Mexico development and northeast of the Winkler county, Texas, area a considerable distance.

A northerly or northwesterly extension of production there would carry development on to University of Texas land, some part of which is being offered for lease at a sale to be held in Austin, Jan. 21.

THE Deep Rock well found the first Andrews production after the drilling of the company's third test northwest of the inland county seat town of Andrews. No other tests are at present under way in the county.

Observers who have watched the formations penetrated and the behavior of the well profess to see in it characteristics similar to the Church & Fields discovery completions in Crane county, several years ago. The Church & Fields discovery was good for approximately 190 barrels initial production.

Other Church & Fields district wells that were subsequently drilled gave up some of the most consistent flowing production of the salt basin region. It will be recalled that the Church & Fields area and the Gulf Production Co.'s 27-section McElroy ranch development are separated in the center by the narrow Cowden excess strip, drilled by Landreth Production Co., and later sold to The Texas Co.

In this connection, it has been found interesting to note that The Texas Co.'s No. 11 well, on the so-called Landreth strip, had produced a grand total of 4,430,827 barrels of crude oil to Jan. 1, 1930. It began producing Aug. 9, 1927, making 8996 barrels daily. In December 1929, it averaged 3823 barrels daily.

Total production of the 16 wells on the 182.8-acre strip, 400 feet wide and three and three-quarters miles long, had been 7,078,961 barrels to Jan. 1, 1930. Together, the 16 wells made 4804 barrels daily average in December. Approximately 100 acres of the strip are productive, on which basis recovery is figured as averaging 70,789 barrels an acre to date.

ADVERTISING PAGES OMITTED

THE glories and wealth of Oklahoma will be outlined to the nation on Feb. 8 by Governor Holloway, who will speak over WMAQ, Chicago. It is to be hoped that the governor will have a good audience. Looking at the calendar we note that the date is on a Saturday, around 6 or 7 o'clock in the evening being the time chosen and that is the time when the Shellodians tell us, between musical bits, about Tagolene, Skelgas and that gasoline which makes your car climb all hills in high. It is a bad break for the governor, for the Skellodians are a favorite number.

Anyway, the governor is going to tell all about us, a number of grand thoughts having been assembled by various committees. W. G. Skelly, say the public prints, was asked to get together the dope on oil for the address. He passed it on to Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, who knows all about statistics and such. He promptly passed it on to Clarel B. Mapes, the assistant secretary and at last accounts he was performing the task in his usual thorough manner. We, personally, should like to hear the talk and we hope it will occur after the Skellodians have finished.

* * *

The instant blizzard, pronounced by those who try to remember the weather as the most severe in 24 years, sent the male citizenry into oil field uniforms. There probably isn't a man in the town who has to do with the oil business, including the high-collar executives, but that has a pair of "big hole" boots and all the khaki and leathern clothes that go to make up the correct ensemble for wading in slush pits and shinning up tanks.

And nothing puts the stamp of the oil fields upon the town, dudish as it may appear in fine weather, as a good hefty snow. There was, merchants say, quite a little buying of spats for wading through drifts but that was done by the boys who never leave the sidewalks. There is nothing so satisfying in a blizzard as a set of oil tanned boots of a bigness sufficient to encase at least one pair of knee-length socks with gaudy red or green tops.

* * *

This seems to be a new high rec-ord. David H. Morgan, of the drilling firm, Morgan & Sutherland, Wichita, Kans., says his team has drilled 80 consecutive dry holes.

* * *

John A. Kay, who has been in charge of land and geological work for the Continental Oil Co., Wichita Falls office, has resigned. This district will be under J. J. Maucini, who also directs the same type of work for the company in the Texas Panhandle.

* * *

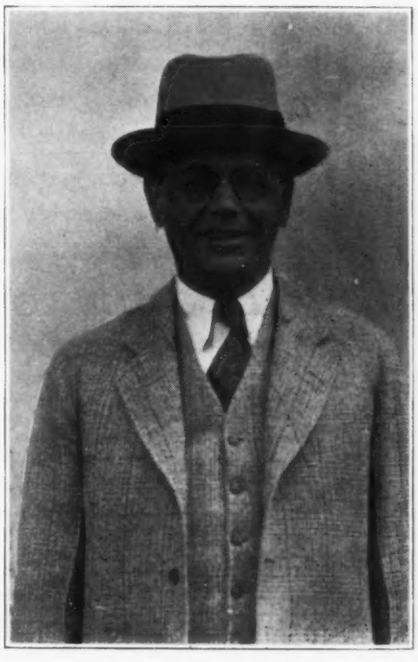
Says the Doherty News, commenting on the December meeting of the American Petroleum Institute: "The one outstanding feature of the convention from our point of view was the adoption by the board of directors of a resolution endorsing the policy of the unit operation and management of oil pools, which had been first advocated by Mr. Doherty six years ago, but which was at the time bitterly opposed by a majority of the leading officers of the association."

* * *

Early in the year E. P. (Tex) Jones, Okmulgee operator, made public in an Okmulgee newspaper some of his views on the oil situation. Mr. Jones' article was a little startling. He thinks the state of Oklahoma is not realizing its manifest destiny in the matter of holding on to part of the oil wealth and his suggestion is that the state tax companies producing more than 5000 barrels per day on a graduated scale running to 12½ per cent.

He says that not one per cent of the stock of the large companies is owned in Oklahoma and he asks whether the people are to continue to tax themselves, vote bond issues for public improvements, while "we enrich the plutocrats of New York." He asks why, if the oil industry is here to stay, most of the large companies rent offices instead of building them.

Mr. Jones announces his opposition to unitization of leaseholds as such procedure is "simply putting control of their business in the hands of those with sinister motives." All in all, Mr. Jones is not satisfied with the way things are going and he thinks some statesman should go to the people and tell them about it.



Henry L. Phillips

* * *

Henry L. Phillips, president of the Sinclair Crude Oil Purchasing Co., is another oil man who came into the industry via the legal route. After equipping himself with a license and the necessary knowledge to practice law, he came to Tulsa, joining first the companies of the late Charles Page and a little later the Sinclair.

He moved out of the legal department presently, becoming an assistant to the executive department. With the formation of the purchasing company he went into the management and his job today is to see that enough crude oil is acquired to supply the refineries of the Sinclair company and the Standard Oil Co. of Indiana, joint owners of Sinclair Crude Purchasing.

* * *

With nine transfers announced recently in the Texas Panhandle, it looks as if the area was in for a new deal. The Skelly Oil Co., dealt a whole new hand in their Amarillo office. H. E. Crum is returning to take up where he left off some months ago, his duties as district

Reading 5-Point Pipe (at left) replaces gasoline line, constructed of ordinary pipe (right), which failed after only one year's service. An actual photograph.

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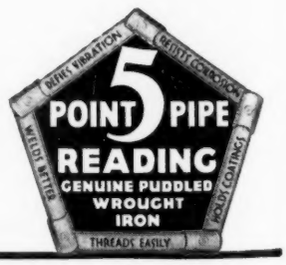

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geologist. The position of subsurface geologist for Kansas and Oklahoma, which he vacated in the Tulsa office, is to be taken by T. F. Newman from the Amarillo office.

The Panhandle scout for the Skelly for the past two years, R. R. Ransome, is moving to Shawnee to take up similar duties in the Seminole district. From Russell, Kansas, Carl Smith, landman and scout, will return to Amarillo after an absence of over a year.

The Shell Petroleum Corp., evidently sat in the same game, for Ira B. Laughlin, district landman and scout, has been moved to the land department at Wichita, Kansas. D. W. Wise was transferred from Pampa to Amarillo where he will assume, in addition to his other scouting duties, the position of office manager, vacated by Mr. Laughlin.

The only new man to the territory of all those mentioned above will be M. Irwin, who is being transferred from Enid, Okla., to replace Mr. Wise as scout in the Pampa area.

* * *

James E. Woodworth has been elected treasurer of the Burford Oil Co. He was for nine years in the service of the Marland Oil Co., as statistician, accountant and treasurer of the Marland Oil Co. of Mexico.

* * *

The Cal-Cul Oil Co., organized by John J. Callahan and the late H. L. Culpepper, has closed its Oklahoma City offices and will conduct its business through the main office in Okmulgee. Shortly after closing the branch office a deal was made with T. B. Slick whereby the latter bought a half interest in Cal-Cul's lease, southeast of present production in the Oklahoma City pool, for consideration reported at $100,000.

L. A. Conner, who had charge of the Oklahoma City office, has left the company and with C. C. Hester, of Blanchard, Okla., has set up a new firm to deal in leases and royalties.

* * *

The people of the Southwest having grown rather placid as a result of fairly prosperous conditions in the past few years, it is now possible for a Republican to come and go anywhere. Tulsa and Amarillo were visited recently by C. Bascom Slemp, one time secretary to President Coolidge. Mr. Slemp is attorney for the Gibson Oil Co., this being one of the several corporations he represents. The Gibson operates properties in the Texas Panhandle.

* * *

Ellick Botts, the popular ex-pumper of the Gray Horse district, says the present national row over prohibition leaves him unmoved. As one who signed the blue-ribbon pledge at the age of six and in later life threw in with the Association Against the Prohibition Amendment, Mr. Botts feels that he understands both sides. The prohibition situation in Oklahoma, he observes, is better than it has been in 10 years. The quality is steadily improving, even in such isolated places as Gray Horse.

* * *

An idea that has been knocking about in the Standard Oil Co. of New Jersey ranks for several years has reached the patent stage, with Leo Ranney, president of the Ranney Oil Mining Co., as patentee. It involves the burning underground of coal seams, in place, utilizing the gas thereby developed. Press dispatches credit Mr. Ranney with the assertion that the combustion could be so controlled as to yield either motor fuel or industrial gas or, in the event it was desired, carbon dioxide for the manufacture of "dry ice."

The New Jersey organization which controls the Ranney company, has done quite a bit of advanced thinking along such lines. In the development of the Garner-Leyden method of removing paraffin from the face of the sand in oil wells by putting into the well an air-gas mixture and setting it on fire, patent papers were also obtained on the process of heating residue oil in the sand, "cracking" it and recovering the gasoline and other products in the form of gases. These things sound quite far in the future from a commercial standpoint. The company, however, believes in being prepared for any emergency that may come upon the petroleum industry.

* * *

Reconstruction work on the Amarillo refinery of the Texas Co., under way the past year, has been completed. The plant, built in 1919 by Reece S. Allen, was acquired by the Texas Co. late in 1928. It has crude charging capacity of 3,000 barrels daily. J. S. Worden is superintendent and G. C. McSwain assistant. Leonard Lee is the chief engineer.

* * *

The long delayed unveiling of the Pioneer Woman statue, designed by Sculptor Bryant Baker under commission from E. W. Marland, will occur in Ponca City on April 22. This date is the anniversary of the opening of "Old Oklahoma" to settlement, in 1889. This figure will be the central one of a group, others being a plainsman, cowboy, Indian buck and squaw.

* * *

R. B. Newbern was back in Wichita for the holidays. Since leaving the Larutan Gas Corp., which he helped to organize and which became part of the Consolidated Gas Utilities Co., Mr. Newbern formed the Northwestern Natural Gas Co. to pipe gas from the field near Prosser, Wash. The company has laid 45 miles of main line and the necessary distributing systems to supply gas to Prosser, Sunnyside, Grandview and Mabton, in the Yakima valley Trunk lines will be laid to Yakima and Walla Walla, where the Lone Star Gas Co. recently acquired the artificial gas systems and Mr. Newbern's company will sell natural gas to the Lone Star for these points. The production at present is coming from seven wells and four more are drilling. The pay is about 750 feet from the surface. While gas has been found in several places in Oregon and Washington, and in the delta of the Fraser River, near Vancouver, B. C., this is the first time it has been utilized in either Washington, Oregon or Idaho.

* * *

A. M. Smith, of Wichita Falls, is superintendent of the Electrol Refining Co.'s plant at Oklahoma City, which was due to start operations early in January. The plant will use what is known as the McCabe electrical process of cracking.

* * *

Fredrick, Okla., in Tillman county has a new 85-room hotel, just lately opened for business. As this territory is being given more attention by the oil men of late, the advent of the new hotel is welcomed.

* * *

In predicting a year of activity for Kansas, Tom C. Johnson, independent producer and proration umpire of the Witchita district shook a finger at the political forces in the state. "I want to offer a word of warning to those who would obstruct the progress of the oil industry by shackling it with state regulations," said Mr. Johnson. "In recent years the oil companies have been spending as much money in Kansas as they have realized from oil production in the state and they should be encouraged rather than discouraged." In view of the proposal by the tax code commission that a gross production tax of two per cent be placed on oil, it is easy to see what Mr. Johnson had in mind.

* * *

Well, Mr. Harvey M. Loss, of Witchita, finally sold his lease. This is a serial we have followed for weeks in the Witchita newspapers. It seems that he bought something like 20,000 acres in Terrell county, Texas, for $500 about six years ago. He has now crashed in on big money—a half million, the newspapers say. This is for lease on less than half his acreage. The reports were that he had been hounded for weeks by various oil companies. One of them thought up a bit of strategy and tried to get at Mr. Loss through an old army buddy. When they met it developed that substitution has been practiced and it wasn't his old army buddy at all.

* * *

Ten Years Ago

(From National Petroleum News, Jan. 14, 1920)

Standard Oil Co. of New Jersey observes, with banquet, fiftieth anniversary of its founding.

Simms Petroleum Co. leases refinery of Milliken Co., Arkansas City, Kans. (Note: This plant is now being sold for junk.)

Oklahoma City's Huge Potential Grows Daily as "Gushers" Come In

TULSA, Jan. 11

WITH monotonous regularity the Oklahoma City pool turns out completions of high initial production and it is now no occasion for excitement when better than 20,000-barrel wells are drilled in. The past week saw several large ones, including old producers drilled deeper into the sand that has yielded a number of good ones above the Siliceous lime in which the discovery was completed.

The field now stands at around 600,000 barrels daily potential—a greater potential than any one day's actual production in the Seminole district when it was at its height. True it is that if the Oklahoma City field were exploited at full capacity for 24 hours—if that were possible—no such quantity would be forthcoming.

But that potential grows almost daily now and with 55 wells now drilling below 6000 feet it is conceivable that that much actual production will be possible over a sustained period very soon. The field presents a large problem to the operators.

It was agreed that production would be held to 84,000 barrels daily average in January, and was so ordered by the corporation commission. It is regularly exceeding that and on one day, Jan. 6 seven a.m. to Jan. 7 seven a.m. produced 132,375 barrels —a new peak of realized production. More and more wells become eligible to produce as penalties are paid off in accordance with the agreement first set up.

The pipe line situation will continue as a limiting factor and it is in this respect that the industry is not worrying greatly over the pool except as it is merely another big contribution to the huge potential of the country. The only new pipe line into the field now under way is that of the Prairie Pipe Line Co. which is doubling its present 8-inch line, adding to the capacity by 22,000 barrels.

This is not primarily for the purpose of taking out more oil, executives say, but to relieve the pressure on the single line it is now operating. In order to handle the oil tendered by the Prairie Oil & Gas Co. the pipe line is being operated at high pressures and with the new line the margin of safety will be greater.

Indicating the possibilities of the sand horizon above the Siliceous lime, two wells that were deepened during the week performed in spectacular fashion. Hall & Briscoe and Jack Shaffer's No. 1 Childs, SE corner of 14-11-3W, in the northern part of the field, a completion about four months old, was deepened 20 feet to total depth of 6364 feet and jumped its output from 275 barrels hourly to 740.

It produced a total of 11,799 barrels and was then shut in because tankage was exhausted and the pipe line could not handle the production. This well, located on a three-acre lease, had oil sand continuously from 6330 to 6364 feet.

Another recent deepening job was that of Wirt Franklin Petroleum Corp. on No. 2 Lowery, SE NW NW of 12-11-3W, the farthest northwest well in the pool. It actually made, after deepening, 14,692 barrels in 19½ hours.

A quarter of a mile north of the biggest well of the field, the Indian Territory Illuminating Oil Co. and Foster Petroleum Co.'s No. 1 Thomas-Fuzzell, the same interests brought in two more lime producers on the Jennings 40-acre lease. No. 3 Jennings, SE NE SE of 13-11-3W has total depth of 6520 feet. It made 404 barrels the first half hour and 18,307 barrels in 24 hours. The No. 2 Jennings, a location west, had initial production of 21,222 barrels and was cutting 8 per cent.

Like most of the lime wells now in the producing status, the big Thomas-Fuzzell well, in the SW SE SE of 13-11-3W, is having lots of water trouble. Initially it made nearly 43,000 barrels. Its highest recent production was 21,233 barrels in 22 hours, with 1900 barrels of water.

On Jan. 8, producing against back pressure of 850 pounds, it made 9837 barrels of oil and 2607 water. The back-pressuring, which is being done on an experimental basis throughout the field, has greatly decreased the cutting of oil in this well. Reports from the field say that on Jan. 8 the oil cut 21 per cent whereas it was as high as 65 per cent when the well was flowed with no back pressure.

OVER on the southwest edge of the field things do not look so bright. The Indian Territory and Foster companies drilled their No. 1 Mackey, NE corner of 26-11-3, into the sand overlying the Siliceous lime. Bailed 48 hours the hole filled up 5000 feet, of which 3000 feet was water.

It is asserted that this water is not coming from the oil pay, but the well nevertheless does not show much strength. Sand was cored from 6345 to 6365 feet, total depth being 6443 feet. The east offset to this one, No. 2 Bertha Johnson, also an I.T.I.O. and Foster well, had initial production of 2135 barrels. The north and northeast offsets to the Mackey well also lack the "kick" that characterizes the big sand producers.

Other completions in the field were "inside" locations, adding nothing to the extent but increasing the potential. One of these was the Prairie Oil & Gas Co. and T. B. Slick's No. 5 Hiddleston, NW SW SE of 19-11-2W. A group of officials, headed by President Nelson K. Moody and General Manager Dana H. Kelsey, braved a blizzard to see this one come in. It made 9185 barrels in 19½ hours. Total depth is 6521 feet, in lime.

THE active areas of the state outside of the Oklahoma City pool also showed increases, either in actual production, or in work under way. These spots, which include such pools as the new Gilcrease sand find near Konawa, Twp. 6N-6E, and the East Little River and East Earlsboro pools, which fringe older members of the Seminole group, are providing the bulk of the work now going on in areas other than Oklahoma City.

Although no new wells have been completed in the Konawa pool, the 28 active locations are indicative of the rather high regard which owners of acreage in the pool have for its possibilities. But these are proration times for all new pools, so the field felt the hand on the brake the morning of Jan. 11, when all producing wells were required to cut their production 40 per cent under their potential. All new wells will be shut in for 49 days.

Additional pipe line outlet for the field is indicated by the report that The Texas Co. has under way a 4-inch line to serve its properties in the field.

Completions in the East Earlsboro field, particularly the northeast corner of it, were numerous enough and good enough to cause the pool to show a substantial gain for the week. Production climbed to some 86,000 barrels daily, a gain of nearly 24,900 barrels from the preceding week.

There were 14 new wells added to the list of producers. There are still 40 drilling wells under way, so that the pool's importance has not yet been fully indicated.

Noble county made its second bid within the past few weeks to get into the active columns of Oklahoma's oil counties. Its most recent application is the Magnolia Petroleum Co.'s

No. 1 Young, in the NE NW NW of 22-21N-2W which is making about 65 or 70 barrels an hour from what is thought to be the Misener sand.

Although there is some production in the immediate vicinity of the Magnolia's well, it is coming from some of the shallower horizons which are occasionally found productive. The nearest dry holes which have tested this formation are both west of the Magnolia well, one of them in the NW SW of Sec. 28, and the other in the SE SW SW of Sec. 16. The latter is reported as having reached the Wilcox, which it found unproductive.

The oil from the new well is of unusually high gravity, testing 45.4 A.P.I. gravity, corrected. It was encountered at 5100-05.

Kansas showed little change during the week in the way of new wells, although still more work got under way in the Voshell area of McPherson county. Some 43 operations are reported from this field, which is the most active field in Kansas at the present time from the standpoint of new work.

Carrying its share of the proration, the newer fields of Kansas have been operating under restrictive agreements for some time. Efforts were made at a meeting held in Wichita Jan. 10 to extend the agreements into the future.

The 50 per cent proration now operative in the Valley Center field of Sedgwick county was continued until March 31, the same date as the Oklahoma agreements run out.

Nothing really definite was arrived at concerning the Voshell area. At present the few wells in the field are pinched in to 50 barrels per day. The Derby well, classed as the discovery in the deeper pay, has finished its discovery right open production of 35 days, during which time it made some 42,573 barrels total recovery.

At the Wichita meeting it was tentatively agreed to extend the 50 barrels per day plan another 30 days, or until March 15. The agreement could not be considered as definite due to the absence of A. L. Derby.

Proration began to make itself felt in the Texas Panhandle, Bowers and Finley pools. Gray county, where these pools are located, recorded a 6300-barrel drop in the daily average production with proration in effect but five days, the amount being 57,870 barrels daily average for the week ending Jan. 9. Production for the entire Panhandle was 94,200 barrels daily average, as compared with 102,580 barrels for the week before.

Umpire Ed Daly has ordered an increase in the amount of proration, the percentage of cut having been increased to 35 per cent from 27½ per cent. As a sort of advisory board to the umpire there is a group of five men, employes of representative companies operating in the Bowers-Finley area.

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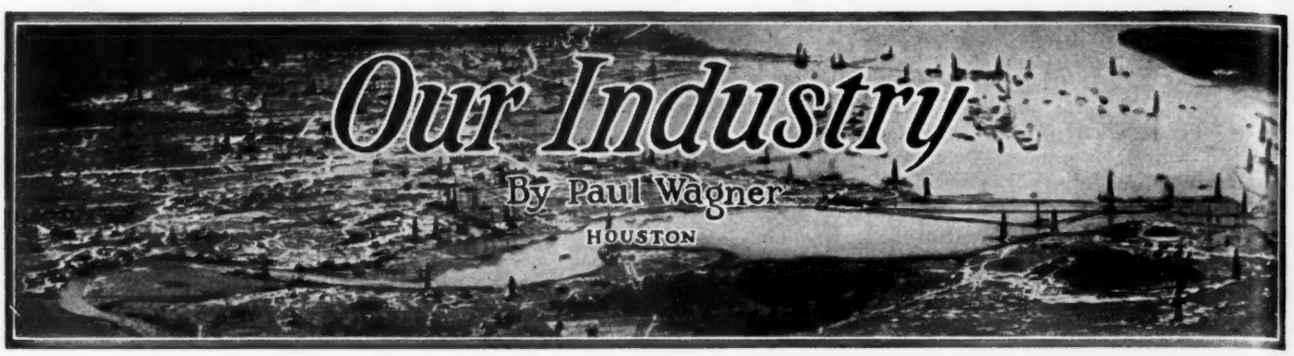
Tulsa, Okla.....*Philtower Bldg.*
Los Angeles, Cal.....*1031 So. Broadway*



E. N. VAN DUZEE, Winkler field production superintendent of Shell Petroleum Corp., in West Texas, works in conjunction with Charles W. Alcorn, who supervises Permian salt basin operations for the company with Midland headquarters. Mr. Van Duzee, who is an engineer by training, makes his personal headquarters at Wink, adjacent to the Winkler field.

* * *

Jack Watt of the land department, Lion Oil & Refining Co., El Dorado, Ark., now makes headquarters at Tyler for work in the East Texas district. He was formerly located at El Dorado.

* * *

L. A. Humphreys, formerly of the Oil Well Supply Co.'s Tulsa organization, has been transferred to Houston as district engineer. At various times in the past he has been connected with the F. W. Freeborn Engineering Corp., the National Supply Co., and the Panhandle Refining Co., in engineering capacities. He is a graduate of the University of Oklahoma mechanical engineering department, where he got his degree in 1918.

* * *

G. I. McBride, petroleum engineer in The Texas Co's. organization, has been transferred to the Shreveport territory, where he will work under the jurisdiction of R. C. Stewart, division manager.

* * *

G. C. Wooley, formerly in the Midwest Exploration Co.'s organization at Abilene, Texas, is now with the Derby Oil Co., Wichita, Kansas.

* * *

W. S. Rogers, formerly of The Texas Production Co., at Denver, has been transferred to Los Angeles, where he is attached to the office of Vice President James A. Bermingham in the capacity of inspector.

* * *

With the closing of the Eastland zone office of the Gulf Production Co., district headquarters for the central west Texas territory were transferred to Wichita Falls. C. W. Hanley is in charge as zone agent and Herbert Aide is zone geologist. C. E. Parker has resumed scouting activities and Mike Hunt, formerly of Eastland, was transferred to Coleman. Frank Baron goes to Big Spring, West Texas, from the Wichita Falls office.

* * *

W. C. Kneale of The Texas Co.'s geological staff in southeastern New Mexico has been transferred to the petroleum engineering department at Fort Worth.

* * *

Frank Logan is now in charge of the Shell Petroleum Corp's. office in the Coleman, Texas, territory. He took the place of Ben Rogers, who was moved to central division headquarters at Dallas.

* * *

Harry C. Rector, Venezuela superintendent of the Richmond Petroleum Co., foreign subsidiary of the Standard Oil Co. of California, has been spending a vacation period on the Pacific Coast.

* * *

C. E. (Red) Morris, field superintendent of the Dixie Gulf Gas Co., in North Louisiana territory, has been transferred from Shreveport to Monroe. He will be in charge of development in the Richland and Monroe gas fields.

* * *

M. J. Munn, widely known as a Mid-Continent geologist for a decade or more, is now in charge of Little Rock, Ark., offices for the Cosden Oil Co., of which J. S. Cosden of Fort Worth is president.

E. N. Van Duzee

* * *

Chester M. Crebbs, general agent of the Venezuela Gulf Oil Co., sailed from New York, Jan. 2, returning to Maracaibo after spending the month of December in the United States. He attended the American Petroleum Institute meeting in Chicago, early in December, and spent the Christmas holidays with relatives at Kerrville, Texas.

* * *

Walter Henshaw, San Angelo oil operator, is home again after a 17,000-mile trip to Australia, requiring four months, on a mission to validate a Pecos county leasehold in West Texas. A change in residence by the man sought had caused mail sent the Australian to be returned repeatedly. Mr. Henshaw then made the trip to the Antipodes, reaching the individual sought only through advertising in a Sydney newspaper.

* * *

The resignations of Rupert P. Ricker and Floyd Dodson, respectively president and vice president of the Black Arrow Oil Co., San Angelo, were announced in connection with the statement that they had sold their interest in the corporation to their associates, mainly of El Paso and Los Angeles. New officers of the $1,000,000 company are Ray D. Robinson, chairman of the board of directors; Loren L. Hillman, president; Carl T. Long, vice president; and John E. McConnell, Jr., secretary-treasurer. Consideration involved in transfer of the Ricker & Dodson interest in the corporation is said to have exceeded par value of the stock, which is $25 a share. Of the total $1,000,000 authorized capital stock, $750,000 is issued and outstanding.

* * *

J. E. Redmond, individual oil operator of Fort Stockton, is recovering from a recent illness which confined him to a hospital in San Angelo for several weeks.

* * *

Transfer of O. B. Grant to the Houston offices of The Texas Co. has resulted in removal of Walter H.

Ralph H. Cummins

Morris from the Electra district to Kingsmill, in the Panhandle territory, where he is in charge of warehouse stores.

* * *

Ralph H. Cummins, vice president of the Southland Royalty Co., at Fort Worth, was formerly identified with the Marland Employees Royalty Co., and other companies of the E. W. Marland group, before reorganization into the present Southland. Before joining the Marland organization upward of five years ago he was connected with the White Eagle Oil & Refining Co., in Kansas territory.

* * *

James Davis, formerly stationed at Coleman, Texas, by the Shell Petroleum Corp., has been transferred to Abilene.

* * *

A comprehensive geological report on the Kevin-Sunburst oil field and possibilities of production elsewhere on the Sweetgrass arch, Montana, has been prepared by Arthur J. Collier and issued by the United States Geological Survey as Bulletin 812-B. Topography, sedimentation and development are discussed. The report includes comprehensive maps and graphs pertinent to the region. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 30 cents each.

* * *

B. G. Von Roeder, chief civil engineer of the Sinclair Oil & Gas Co., Houston, has occupied his present position since 1919. Before that he was a right-of-way engineer for the Southern Pacific lines in Texas. At one time he was a member of the engineering firm of Von Roeder & Stockwell, engaged in consulting work for various oil companies, in South Texas. Mr. Von Roeder is a native of Fayette county, Texas.

F. P. (Spot) Geyer, individual operator of San Angelo, was for years connected with the E. W. Marland interests before engaging in business for himself. He was at one time president of the old Marland Oil Co. of Texas and a director of the parent Marland Oil Co. of Delaware.

After leaving the Marland organization he operated individually in Oklahoma and Texas, but principally in the Permian salt basin geological province, with San Angelo as a base. The striking of oil in the Girvin district of Pecos county, Texas, where Mr. Geyer had leaseholds, is said to have recently redounded considerably to his benefit.

* * *

D. Eyoub, who has been recently making headquarters at San Antonio while engaged in geological research for the Henry L. Doherty interests, is now on a years leave of absence in which to undertake a survey of petroleum possibilities in Turkey. He will operate under a commission from the Ottoman government.

* * *

J. L. Tete, now manager of the employment and service department of The Texas Co. of California, at Los Angeles, was formerly engaged in similar work as chief clerk in a division of the refinery department of The Texas Co., at Houston. In March, next, he will round out his thirteenth year with the company. Mr. Tete has been active in Safety work as secretary of the refining department's central committee before transfer from Houston.

* * *

T. A. Hayes, assistant to the executive vice president of the Union Oil Co. of California, at Los Angeles, was due to return to headquarters the middle of January from a trip to the Canal Zone. He was accompanied by

B. G. Von Roeder

F. Park Geyer

Mrs. Hayes on the Union Oil tanker La Placentia.

* * *

Carey P. Butcher, geologist, is now connected with West Texas operations of the Cranfill-Reynolds Corp., stationed at San Angelo. Previously he was in the Permian salt basin organization of the Continental Oil Co., first at San Angelo and later in southeastern New Mexico.

* * *

Wilbur A. Oborne is now engaged in private geological work, making headquarters at Paris, France. He was formerly with the Lago Petroleum Corp., subsidiary of Pan American Petroleum & Transport Co., at Maracaibo, Venezuela.

* * *

A diary kept by John W. Sargent, killed in a car accident at Columbus, Texas, in the holiday season, has finally revealed details of this "man of mystery," as he was described for a time after his death. It is now known that he represented the Pearson Syndicate (out of which grew the Mexican Eagle Oil Co., Ltd.) in Mexico, from 1906-14. He was also with the Sun Oil Co., at Caracas, Venezuela, in 1923-25. At other times he was in the United States secret service, was engaged in agricultural work in Colombia and had been recently a lecturer in various parts of this country.

* * *

William F. McLaughlin, who has been practicing law for more than 25 years in southern California, has been made a director of the California Mammoth Oil Co., Ltd., Los Angeles, according to Herman Layer, executive vice president.

That company is operating in California, Oklahoma and Nicaragua, holding a concession on 500,000 acres in the latter country, on which drilling began in December.

Consider Extending California Proration To October or November

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, Jan. 10

WITH the approach of Feb. 1, when the restrictions on production of crude oil in California's flush fields expire, there is considerable speculation as to the probable course operators will take during the balance of the year.

Although voluntary curtailment was successful to an encouraging degree in most instances, the California industry is not yet out of the woods and a relapse at this time would, in the opinion of experts, tend to wipe out a large part of the good accomplished during the past three months.

Santa Fe Springs is in an especially precarious position to be left to its own judgment, as far as a suitable production of crude oil is concerned. With all but one operator in accord with the umpire's curtailment orders the field still threatens to jump out of bounds and there are over forty wells due for completion in the Clarke sand prior to Feb. 15.

It is estimated that production at Santa Fe Springs is divided among the various zones as follows:

Zone	Production	No. wells	Average
Upper zones	5,500	.....	.....
Nordstrom	4,851	13	373
Buckbee	4,546	12	379
O'Connell	35,167	66	533
Clarke	114,915	101	1,138
Total	159,479	192	831

These figures show a considerable difference when compared with similar zone total before the present curtailment program was inaugurated. It is the practice of operators having production in several sands at "The Springs" to shut-in the wells producing from the shallow sands as much as possible and to allow the greater percentage of production to come from the recently discovered lower Clarke.

This plan is being adopted by a majority of the larger operators because of the attitude of one or two Independent operators with production in the deeper sands, who cannot see their way to pinch back their wells. Wells offsetting these outlaw producers are allowed to produce practically wide open and the inside wells on the particular lease suffer the larger part of the cut in the potential production.

Operators in the Ventura Avenue field have been holding daily meetings during the past week in an endeavor to agree upon a suitable basis for curtailing production in that field.

Because of the extremely high gas pressure existing in the field, difficulty has been found in beaning back the producing wells a sufficient amount to prevent gas wastage. New completions greatly increase the troubles and, at latest reports, the field was making in excess of 178 million cubic feet per day, or approximately 18 million cubic feet in excess of the allowable output.

An effort is now being made to work out a plan whereby each operator will receive his proportionate part of the revenue from the sale of oil and gas. Under previous plans, operators on various parts of the structure were not satisfied with their allowable productions of either oil in some cases or gas in others.

The larger part of the revenue to the operators comes, of course, from the sale of oil and, for this reason, companies on the top of the structure and therefore producing a greater percentage of gas per barrel of oil cannot afford to shut their wells in to the desired figure.

It is estimated that existing producers could produce over 250 million cubic feet of gas daily if opened up. The oil to gas ratio for the field has averaged about one barrel of oil per 3500 cubic feet of gas, with some wells making as much as 7000 cubic feet per barrel of oil. This in itself indicates the difficulty of the problems confronting the Ventura Avenue operators, difficulties that are far greater than those encountered at either Santa Fe Springs or Long Beach and comparable only to those conditions that may be found, at some future date, in Kettleman Hills.

ELWOOD TERRACE might well be called "God's gift to oil umpires." Production on Jan. 9 was 26,437 barrels or 3563 barrels under the figure set by Umpire Paul Grimm as an allowable production. This field one of the latest to come under the umpire's jurisdiction, had a daily output six weeks ago of nearly 40,000 barrels and so thoroughly have the companies cooperated in the curtailment orders that the excess production marked up during these first few days of operation under the curtailment agreement has nearly been erased.

Drilling operations will be commenced at Elwood after Feb. 1 unless the operators agree to withhold development of the area for another period. It is considered likely that an agreement will be reached whereby drilling will be stopped entirely, or at least it will proceed only in an orderly manner.

There have been rumors that operators in the fields of Ventura Avenue, Santa Fe Springs, Long Beach, and Elwood will agree to curtail their output until October or November, at which time overproduction from these fields would not be feared. The agreement for Santa Fe Springs and Long Beach may be renewed for only 90 days.

CONTINENTAL OIL CO. is reported to be seeking the agreement of interested operators to a modified form of cooperative development for the exploitation of the Carpenteria district. Holders of permits in the area that have been invited to join in the experiment include the following: The Texas Co., Ohio Oil Co., Rio Grande Oil Co., Hancock Oil Co., Lincoln Drilling Co., Independent Oil and Gas Co., and H. L. Weston.

The agreement provides that if the structure is proven productive by the drilling of a test well, each party shall at its own expense drill at least two wells on the property covered by the working agreement. All production obtained to be pooled and divided equally among the various operators in cash or kind at each operator's option. If the plan is agreed to it will be the first of its kind in California and operators are watching developments with considerable interest.

General Petroleum Corp. successfully completed its Ochsner 2 in section 26 on the north dome of Kettleman Hills Jan. 9, for an estimated flow of 1000 barrels of 61 gravity oil and 30 million cubic feet per day, from a depth of 7300 feet. The well was allowed to flow only long enough to obtain an approximate gauge.

Petroleum Securities Oil Co., expects to have its Felix 1, on section 35 of Fee land at Kettleman Hills, on production early during the coming week. With the completion of this well the field's daily output will be from 15,000 to 20,000 barrels, as the present production is about 13,500 barrels per day, and the Felix is

thought to have an excellent chance of making over 3000 barrels per day.

Standard Oil Co.'s offset well also on section 35, is now drilling at 7300 feet and Associated Oil Co. is below 5450 feet in its offset to the west of Petroleum Securities' test. Both of these wells could be on production within two months and might add a considerable amount to the field's yield.

Leaders in the industry, working in conjunction with the Department of the Interior, are striving to bring about a halt in drilling on this fee land as every barrel of Kettleman Hills crude produced is the equivalent of three barrels of crude from practically any other California field as far as gasoline content is concerned.

The conservation movement at Kettleman Hills has proven to be one of the most constructive ever tried and to have it wrecked, just at a time when voluntary curtailment is gaining headway, would prove disastrous.

With 4¾-inch casing set at 8737 feet Oscar R. Howard's Hathaway No. 7, the deep test of the Santa Fe Springs field, is ready for a production test that is expected to prove the possibilities of the lower Clarke sand. It is reported that the hole, which had been drilled to 9350 feet, has been plugged back to 8963 feet to shut off the water and because the lower sands in this edge well were not considered of sufficient saturation to warrant a production test.

Experts do not believe that any great quantity of oil will be produced from below the 9000 foot level, in this field at least.

Increased activity is expected in the southeast portion of the Long Beach field due to the decision of Shell Oil Co. to drill 2 deep tests on its Patton Wilson lease. The wells are to be drilled to near the 7000 foot horizon in search of the productive sand recently found by the State Oil Co., in its Sievers No. 1 in that area.

Completions in Texas, Week Ended January 11, 1930

NORTH CENTRAL & EAST CENTRAL

Brown County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Anderson	1-Riordan	Jennings	Blk-353	1204-1228	8
Combs-Rodgers et al.	1-Barnes	Hawkenburg	Blk-105	1141-1146	2½M
Owens Inc.	2-Whiteside	Banister	Blk-627	1309-1318	200
Smith	14-George	Chaddick	Sec-42	1324-1325	50
Hart	1-Scott	Douglas	Blk-100	T.D. 1880	Dry
Paramount	1-Guyer	HT&B	Sec-22	T.D. 1090	Dry
Tylee et al.	1-Gaines	HT&B	Sec-43	T.D. 1375	Dry

Callahan County

Bailey-Mancill	4-Williams	Univ.	Sec-139	T.D. 525	Dry
Ewmo	8-Beasley	D&DA	Sec-25	T.D. 717	Dry
Kleiner	1-Miller	GH&H	Sec-143	T.D. 1072	Dry

Coleman County

Acrey Bros.	1-Baker	Bruff	Blk-250	T.D. 802	Dry
Brodrick-Calvert	2-Buck	Cochran	Blk-269	T.D. 2008	Dry
Kidney-Kamon & Western Explor.	1-Pfluger	Skirlock	Blk-280	1434-1442	37
Tidal	1-Stewardson	ET	Sec-91	1433-1443	150

Eastland County

Gordon	1-Clark	ET	Sec-13 Blk-2	T.D. 1655	Dry

Jones County

Adsit et al.	1-Twenson	BBB&C	Sec-193	T.D. 2508	Dry

McCulloch County

Brock et al.	1-Commercial Nat'l. Bank	Littenbrack	Blk-303	T.D. 554	Dry

Shackleford County

Worth Petr.	1-Scott	Harding		T.D. 1910	Dry
Big States	1-Mason	Woodward		T.D. 977	Dry
Hart-Wright	3-Clark	BAL	Sec-2	T.D. 700	Dry
Hart-Wright	4-Clark	BAL	Sec-2	T.D. 701	Dry
Hart-Wright	1-Deats	T&P	Sec-20 Blk-11	T.D. 708	Dry
Hughes et al.	2-Davis	T&P	Sec-47 Blk-13	T.D. 1815	Dry
Coleman-Sticks et al.	1-Clark	BAL	Sec-2	645-648	25
Callahan-Carter	1-Clark Est.	BAL	Sec-2	657-658	50

Stephens County

Hickock Prod. & Dev.	3-Hamil	LAL	Sec-6	T.D. 4031	Dry

NORTH TEXAS

Archer County

Pandem	2-Young	TE&L	Sec-2426	1406-1416	140
Duke et al.	1-Harmel	TE&L	Sec-2491	T.D. 1500	Dry
Gilliland-Rosser	1-Walsh	TE&L	Sec-2416	T.D. 1403	Dry
Panhandle	1-Cockrell	TE&L	Sec-2450	T.D. 1530	Dry

Baylor County

Douglass	1-Turbeville	T&NO	Sec-239	T.D. 2301	Dry

Cooke County

Lanier et al.	1-Young	Long		T.D. 2010	Dry

Montague County

Barnsdall	3-Cunningham	Norton		914-921	35
Continental	27-Howard	Chambliss		1005-1026	20
Lesh-McCall	1-Cunningham	Norton		921-926	25

Wichita County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Hobbs	1-Hodge	KWVFL	Blk-32	1758-1760	35
Sheldon et al.	2-Robinson	Waggoner	Blk-310	1917-1932	45
Sheldon-Jamison	2-Volkhart	Waggoner	Blk-309	1929-1933	80
Ascott	3-Jackson	Denton Co. Sch. Ld. League-4	Blk-25	T.D. 1829	Dry
Ridgeway	1-Obenhaus	Waggoner	Blk-276	T.D. 2652	Dry
Staley-Wynne	1-Hodge	KWVFL	Blk-32	T.D. 1850	Dry

Wilbarger County

Pigg	1-Milner	H&TC	Sec-30 Blk-9	T.D. 2135	Dry
Texas	368-Waggoner	H&TC	Sec-5 Blk-13	T.D. 2288	Dry
Texas	369-Waggoner	TC	Sec-1	T.D. 1150	Dry
Atlantic-Seigler	6-Waggoner	H&TC	Sec-35 Blk-2	2679-2681	850
Davis	5-Waggoner	H&TC	Sec-35 Blk-2	2644-2674	452
Empire	B28-Waggoner	H&TC	Sec-32 Blk-4	2092-2093	75
Martin	1-George	Poitevent	Sec-29	2214-2224	140
Staley-Wynne	E7-Waggoner	H&TC	Sec-25 Blk-4	2388-2390	118
Waggoner	P3-Waggoner	H&TC	Sec-35 Blk-2	2654-2676	500
Waggoner	P4-Waggoner	H&TC	Sec-35 Blk-2	2671-2688	500

Young County

Perkins-Cullum	3-Deitrich	Stell		1131-1158	150
Riggs	1-Keeter	TE&L	Sec-150	859-864	190
Sun	17-Kunkel	BBB&C	Sec-4	1142-1152	130
Shaw Ints.	1-McLaren	Conner		2594-2617	56
Lowery	3-Atchley	TE&L	Sec-226	T.D. 810	Dry
Madden et al.	1-Winkler	Holeman		T.D. 1275	Dry
Wooten-Reed	4-Casey	TE&L	Sec-1905	T.D. 625	Dry

PANHANDLE

Carson County

Gulf Prod.	5-Cooper	I&GN	Sec-5 Blk-9	3030-3120	355

Gray County

Operators	1-Lovett	H&GN	Sec-57 Blk-B-2	2880-3061	50

Hemphill County

Hoover et al.	1-Hoover	Hood		T.D. 5065	Dry

Hutchinson County

Skelly	1-Bivins	H&TC	Sec-84 Blk-46	3008-3013	268
Holmes et al.	1-Moore	I&GN	Sec-125 Blk-4	3095-3170	75

Lipscomb County

Cal-Tex	1-Bradford	H&TC	Sec-899 Blk-43	T.D. 135	Dry

Roberts County

Trammell et al.	1-Hammon	Clay Co. Sch. Ld.		T.D. 90	Dry
Pettyjohn et al.	1-Meade	H&GN	Sec-29 Blk-B-1	T.D. 463	Dry
Murphy et al.	1-Gill	H&GN	Sec-31 Blk-M-2	T.D. 650	Dry
Pan State	1-Fandry	H&TC	Sec-179 Blk-42	T.D. 220	Dry

Wheeler County

Martin-Debons.	B2-Close	H&GN	Sec-83 Blk-223	1575-1600	60M

WEST TEXAS

Crane County

Gulf Prod.	70-McElroy	CCSD	Sec-201 Blk-F	2822-2945	150

Pecos County

Jay Hawk	1-Price	H&GN	Sec-6 Blk-12	T.D. 1735	Dry
Landreth Prod.-Dunning	1-McDonald	H&GN	Sec-40½ Blk-12	T.D. 1670	Dry
Humble	1-Bilbrage	H&GN	Sec-34 Blk-11	T.D. 2013	Dry

Upton County

Humble	13-Ricker	Denton	Sec-5	2105-2208	304

Completions in North Louisiana and Arkansas, Week Ended January 9, 1930

Louisiana—Bossier Parish

Company	Well	Location	Depth	Yield
C. G. Nesbitt et al.	W. P. Leonard No. 1	20–19–13	2864	Dry, abnd.

LaSalle Parish—Urania

Philp et al.	Urania No. 1	1–10–1E	730	s. w. abnd.

Ouachita Parish—Monroe

Bahan & Bahan	School Board No. 3	10–20–3E	2174	4M ft. gas
Mich.-Louisiana O. & G. Co.	Osterland No. 1	42–18–4E	2197	½M ft. gas
Sho-Van Gas Company	West Virginia No. 5	6–18–4E	2255	3M ft. gas
Southern Carbon Co.	Phillips No. 4	8–19–4E	2177	10M ft. gas
Palmer Corp.	Cagle No. 1	7–18–5E	2218	½M ft. gas

Richland Parish

Industrial Gas Co.	Jack Davidson A-1	6–16–7E	2470	½M ft. gas
Industrial Gas Co.	Boughton No. 1	1–16–6E	2388	44M ft. gas
Palmer Corpn.	Eubanks No. 1	26–17–6E	2445	1M ft. gas

East Texas—Panola County

Natural Gas Prod. Co.	Roquemore No. 11	Co-Ord F-15	2300	12M ft. gas

Arkansas—Union County

Magnolia Pet. Co.	Schmidt No. 1	15–17–14	2718	s. w. abnd.
Lion O. R. Co.	Hardy Murphy No. 3	9–16–15	2296	35 bbls.
Lion O. R. Co.	Bilyew B-1	8–16–15	2123	10 bbls.
Shell Pet. Co.	Umsted 1-A	4–16–15	2274	30 bbls.
C. E. Murdock	Gallagher & Nelson No. 1	18–18–17	2274	Dry abnd.
Modisette Drilling Co.	Union Sawmill No. 2	14–18–14	2238	90 bbls.

Completions in Oklahoma and Kansas, Week Ended January 11, 1930

OKLAHOMA

Beckham County

Company	Well No.	Location	Depth	Init. Prod.
White et al	1	NWc 26-9-23 W	2610-2639	25M

Caddo County

Magnolia	6	SEc NE SW NE 36-6-10 W	3272-3285	260

Canadian County

Spears	1	SWc NE 9-14-6 W	T.D. 3223	Dry

Cotton County

Silurian et al	4	NEc NW 2-2-10 W	2135-2160	40
Shasta	1	SWc NE 1-2-10 W	2229-2240	35
Franklin	2	SEc NE SW 35-1-10 W	2163-2174	5
Shasta	1	SWc NE 31-1-9 W	2230-2233	7

Creek County

Independent	6	SWc NE SW 15-14-8 E	3801-3841	200
Darby	3	SEc SW NE 21-16-8 E	3180-3193	435
Texas	6	SEc 14-17-10 E	1893-1926	35
Hemlock	1	SWc 35-17-10 E	T.D. 2961	Dry

Grady County

Meridian	5	CWL NW NE 36-4-8 W	2046-2178	6M

Hughes County

Pine	2	SW SE NE 6-8-9 E	T.D. 3478	Dry

Jefferson County

Beck	5	NEc SE SW 34-6-5 W	1280-1285	45

Kiowa County

Bridwell	2	NWc SE NW 18-6-16 W	T.D. 490	Dry

Le Flore County

Sooner	1	C SW SW 11-5-25 E	T.D. 2344	Dry

Lincoln County

Magnolia	1	NE NW NE 17-14-4 E	5065-5082	230

Marshall County

Goddard	3	NWc SW SW SW 13-5-5 E	527-559	75

Muskogee County

Johnston et al	2	NWc SE SE 13-13-18 E	724-738	1M
Mazda	5	SEc NW SE NW 8-13-16 E	1651-1678	125
Mack Drlg	2	NWc SE NW NE 33-16-15 E	1432-1445	75
Foltz et al	1	SEc NE 9-15-17 E	T.D. 1914	Dry

Okfuskee County

McCulloch et al	1	NEc SE 20-10-11 E	T.D. 3303	Dry
Continental	1	NEc SW NW 32-12-10 E	2915-2945	45

Oklahoma County

Coline	2	C NE NW 24-11-3 W	6322-6342	50M
Coline	3	NWc 24-11-3 W	6409-6437	12,197
I. T. I. O. et al	2	NEc 24-11-3 W	6020-6525	42,584
I. T. I. O.	1	SW SE SE 13-11-3 W	6070-6542	43,557
I. T. I. O. et al	2	SWc 13-11-3 W	6377-6391	19,722
I. T. I. O. et al	2	SE NW NW 30-11-2 W	6205-6637	646
I. T. I. O. et al	1	NEc SW 30-11-2 W	6371-6412	750

Okmulgee County

McCrory et al	1	NWc NE SE 19-13-15 E	T.D. 2300	Dry
Selby	17	C NW NE 26-14-14 E	T.D. 1620	Dry

Osage County

Mid-Continent	1	SWc NE 34-20-10 E	2249-2260	40
Branstetter et al	7	NW SE SE 22-22-11 E	1652-1711	7
Silurian	58	NEc SW SW NW 17-23-12 E	1483-1568	30
Winona	9	CNL S½ N½ NE 20-20-9 E	1562-1582	25

Pawnee County

Sears et al	7	CNL NE NW 35-20-9 E	2020-2059	250
Adamson	4	NE SW SE 24-21-7 E	1145-1152	3M

Payne County

Twin State	1	SE SW SE 25-19-4 E	T.D. 3860	Dry

Pittsburg County

Company	Well No.	Location	Depth	Init. Prod.
Midwestern	1	SE SW SE 9-7-18 E	1722-1962	7M

Pontotoc County

Denver Prod. & Ref.	1	SEc 25-5-4 E	2470-2630	165
Texas Pacific	2	NE NW NE 30-5-5 E	2358-2492	145
Universal	3	SWc NW SW NW 36-5-6 E	2038-2058	20
Royalty	2	NW SE NE 36-5-6 E	1638-1640	15
Homaokla	1	NEc NW 3-4-8 E	T.D. 1567	Dry

Pottawatomie County

Atlantic-Champlin	1	SE NW SE 9-7-4 E	T.D. 4405	Dry OWD
Superior et al	1	SEc 25-5-5 E	T.D. 3095	Dry
Interocean	2	SW NE SE 24-7-4 E	3670-4178	440
Magnolia	2	SE NW NW 22-7-4 E	4135-4150	440
Texas	1	SE NE SW 35-8-4 E	3803-3939	35
Gypsy	3	NE NW SW 9-8-5 E	4044-4046	620
Empire-Amerada	3	SE NE NW 8-9-5 E	4342-4364	705

Seminole County

Sinclair	5	NW NE SE 23-5-7 E	4208-4229	2200
I. T. I. O.	2	NE NW SE 13-6-7 E	4235-4238	550
Cont.-Shaffer	8	NE NW SW 4-7-7 E	4193-4201	495
Gypsy	2	SW NW NW 20-9-6 E	4234-4249	2283
Sinclair	2	NWc NE 19-9-6 E	4195-4228	2230
Shell	3	NE SE NE 19-9-6 E	4176-4200	7445
Carter	1	SW NW SW 19-9-6 E	4142-4154	805
Magnolia	4	NW NE NE 18-9-6 E	4330-4341	315
Magnolia	2	SW NE NE 18-9-6 E	4260-4280	635
Minnehoma	4	SE NW NW 17-9-6 E	4207-4222	600
Minnehoma	2	SW SE NW 17-9-6 E	4259-4275	15

Stephens County

Magnolia	8	SWc NE NW NE 34-1-8 W	1908-1911	8M
Mudge	1	SEc NW SW 15-1-5 W	T.D. 1950	Dry

Sequoyah County

Hunt	1	SWc 12-12-23 E	T.D. 1310	Dry

Texas County

Skaer et al	1	NWc 25-1-15 E	T.D. 250	Dry

Wagoner County

Keener	1	NWc NE NW 3-16-19 E	255-271	1/10M

KANSAS

Butler County

Valley-Osage	1	SEc 34-23-3 E	T.D. 2580	Dry
Marland	1	SWc NW 22-27-3 E	T.D. 3182	Dry
Lario	1	NE SE NE 36-26-3 E	T.D. 3085	Dry

Cowley County

Arkansas	1	C SW NE 7-32-5 E	656-668	1M

Greenwood County

Simmons-Amerada	1	NW NE NW 27-23-11 E	1924-1988	250
Mendenhall et al	3	CWL NW NW 9-25-13 E	T.D. 1671	Dry
Kite et al	1	NEc 33-23-11 E	T.D. 2527	Dry

Harvey County

Indep. et al	1	C NE 7-24-1 W	T.D. 3815	Dry

Lyon County

Gordan-Staats	1	NE SE NW 16-17-10 E	T.D. 350	Dry

McPherson County

McPherson	1	SW NE NE 15-21-2 W	T.D. 3592	Dry
McPherson	1	C SE 23-18-2 W	T.D. 3590	Dry

Sedgwick County

Bu Vi Bar et al	10	SW SE NE 12-26-1 W	3366-3369	700

Stevens County

Trees	1	C SW 3-35-38 W	2615-2780	11¼M

Completions in California, Week Ended January 4, 1930

Fruitvale

Company	Well No.	Location	Depth	Init. Prod.
Western Gulf Oil Co	K. C. L. B-10	....	4004	680

Kettleman Hills

Standard Oil Co	8-1P	....	7109	4000

Long Beach

A. T. Jergins Synd	No. 9	....	4653	260
A. Johnston	Vulcan 1	....	7009	300

Santa Fe Springs

Company	Well No.	Location	Depth	Init. Prod.
Cypress Pet. Co	Wardman 1	....	7975	3000
General Pet. Corp.	S. F. 177E	....	8060	2300
General Pet. Corp.	S. F. 237	....	8000	1500
Shell Oil Co.	G. H. & N. 14	....	6864	118
Universal Oil Co	Blanchard 12	....	7871	4500
The Texas Co.	Matern 2-10	....	7930	1384
Union Oil Co.	Alexander 19	....	7985	6500
Union Oil Co.	Bell 46	....	7985	1290
Standard Oil Co	Walker 12	....	6826	230

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended January 11, 1930

OKLAHOMA

Carter County

Company	Well No. & Farm	Location
Carter	1-Cobb	SW NE SE 30-1-3 W
Franklin	1-Spigler	SW NW NW 24-1-3 W

Creek County

Franchot	33-Keifer	CSL SW 17-17-12 E
Taylor et al	2-Goat	SEc SW NW SE 31-18-11 E

Garvin County

Peckham et al	1-Mullins	C W½ W½ 11-4-1 E

Jefferson County

Carter	2-Seay	NEc NW SE SW 34-6-5 W

Kiowa County

Alexander et al	2-Prough	NWc SW SW SW 17-6-16 W

Marshall County

Goddard	4-McComas	SWc 13-5-5 E
Bilbo	3-Taliaferro	SEc SW NE SE 14-5-5 E
Bilbo	4-Taliaferro	NEc SE SE SE 14-5-5 E
Westheimer	1-Null	NEc SW NW 24-5-5 E
Bilbo	3-Sullivan	NEc SW SW 30-5-6 E
Westheimer	2-Davidson	SWc NE NW NW 30-5-6 E

McIntosh County

Young et al	1-Hardin	NWc NE 3-12-15 E

Muskogee County

Stoner et al	1-Mundis	NWc 31-14-19 E
Boyle et al	3-Russell	CSL NE SE 19-15-16 E
Aggas	4-Hawkins	SWc SE 28-16-15 E

Okfuskee County

Company	Well No. & Farm	Location
Summitt Drlg	1-Likosky	SE NE NW 23-11-11 E
Barnsdall et al	1-Davis	SEc NW 15-13-9 E

Oklahoma County

Coline	5-Clauer	NE SE SE 25-11-3 W
Mid-Kansas	3-Mollman	SE NW SE 23-11-3 W
I. T. I. O.	3-Werner et al.	SW NE SE 23-11-3 W
Hall-Briscoe	1-Mt. Vernon	SE NE NE 15-11-3 W
Cromwell-Franklin et al.	15-Trosper Park	NE SW SE 13-11-3 W
Cromwell-Franklin	16-Trosper Park	SE NW NE 13-11-3 W
I. T. I. O. et al	3-Brokaw	SW NE NE 13-11-3 W
I. T. I. O. et al	3-Brokaw	NW SE NE 13-11-3 W
Skelly	1-Dunn	C E½ NW SW 1-11-3 W
I. T. I. O. et al	10-Jones	NW SE NW 31-11-2 W
I. T. I. O. et al	9-Jones	SW NE NW 31-11-2 W
Skelly	6-Hoopes	NEc 31-11-2 W
Skelly	5-Hoopes	NW NE NE 31-11-2 W
I. T. I. O. et al	8-Emerson	NW SE SW 30-11-2 W
Sinclair-Amerada	9-Kinter	SW NW SE 30-11-2 W
Sinclair-Amerada	8-Kinter	SEc 30-11-2 W
Sinclair-Amerada	7-Kinter	SW SE SE 30-11-2 W
Sinclair-Amerada	6-Kinter	NE SW SE 30-11-2 W

(Continued on Page 47)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended January 11, 1930

(*Continued from Page 46*)

Company	Well No. & Farm	Location	
Okmulgee County			
Sinclair-Amerada	1-Kinter	NWc SE 30-11-2 W	OWD
Slick et al	2-Hussman	SWc 29-11-2 W	
Coline	8-Warren	SE NW SW 18-11-2 W	
I. T. I. O. et al	10-Emmerson	SE NE SW 30-11-2 W	
I. T. I. O.	9-Emmerson	NW SW SW 30-11-2 W	
I. T. I. O. et al	1-Slasman	NWc 32-11-2 W	
Osage County			
Morrison-Eberly	2-Burgess	NWc NE NW 20-12-13 E	
Pine	1-Burgess	NEc SW SW 17-12-13 E	OWD
Selby	18-Flint	SWc NW NE 26-14-14 E	
Swindler	3-Scott	CEL SE SE 36-15-14 E	OWD
Kay County	1	CNL SW SW 28-24-4 E	
Okla. Nat.	1756	SEc NE 31-21-11 E	
Haskell et al	55	SEc NE 21-25-12 E	
Winona	10	NW SE NE 20-29-9 E	
Peters-Prod. & Refs. Corp.	1	NEc NW 29-29-6 E	
Pawnee County			
Devonian	3-Copeland	CSL SE SE 26-20-9 E	
Hoss et al	1-Russell	SEc NW 20-20-9 E	
Thompson-Black	2-More	NWc SW 14-20-9 E	
Murta et al	1-Van Noy	NW SW SE 19-20-7 E	
Geraldine	3-Edmiston	NE SW SW 30-21-9 E	
Lille et al	12-Helmick	NE SW NE 18-21-8 E	
Turner et al	1-Niccum	SE NE SE 32-21-7 E	
Adamson Jr.	1-Kelso	NW SW SW 19-21-7 E	
Payne County			
Marrs et al	1-Tietz	SW NW SE 6-18-4 E	
Shaffer	3-Echo Hawk	NE NW NE 9-18-5 E	
Pontotoc County			
Benedum-Trees	2-Browall	NEc NW 31-5-5 E	
Delaney-King	1-Adams	SW SE NE 32-5-8 E	
Pottawatomie County			
McMann-White Eagle	3-Roberts	NEc SW 9-8-5 E	
Stauffer et al	1-Townlot	SEc SW 18-6-4 E	
Gwin	1-Townlot	SE NE SW 8-9-5 E	
Gwin	1-Townlot	NW SW NW 8-9-5 E	
Seminole County			
Pure	10-Bates	NEc 13-6-7 E	
Pure	9-Bates	NEc 13-6-7 E	
Superior	1-Morgan	SEc 19-6-6 E	
Harris	5-Harjoche	NW SE SE 8-6-6 E	
Harris	6-Harjoche	SW NE SE 8-6-6 E	
Champlin-Empire	3-Skinner	SWc NW 9-6-6 E	
Mid-Continent	3-Harjoche	SE SW SE 8-6-6 E	
Magnolia	1-Johnson	NE SW NW 17-6-6 E	
Carter	4-Spillman	SWc 7-6-8 E	
Gypsy	1-Warren	NW NE NE 17-6-6 E	
McCulloch	1-Robert	NWc 16-6-6 E	
Independent	1-Okfuskee	NW SW NW 16-6-6 E	
Hilton-Phillips et al.	1-Hyde	SEc NE 20-6-6 E	
McCulloch	1-Cutetake	NW NE SW 16-6-6 E	
Texas	1-Harjoche	NE NW NE 17-6-6 E	
Mid-Continent	2-Harjoche	NE SW SE 8-6-6 E	
Harris et al	4-Harjoche	SW SE SE 8-6-6 E	
Champlin-Shell	2-Sachemeche	SWc 9-6-6 E	
Harris et al	3-Harjoche	SEc 8-6-6 E	
Pure	1-Maupin	SEc NE 7-6-6 E	
Sinclair	1-Johnson	NE SE NW 17-6-6 E	
Empire	5-Coker	NE SE SW 13-7-6 E	
Amerada-Dixie	2-Billington	NE SW NE 24-7-6 E	
Mid-Continent	4-Yarhola	NW SE NE 8-7-7 E	
Keister-Manning Drlg. Independent.	1	NW SE NW 30-8-7 E	
Independent-Atlantic	4-Fixico	SE SW NW 20-9-6 E	
Carter	3-Campbell	NE NW SW 20-9-6 E	
Carter	4-Campbell	NW NE SW 20-9-6 E	
McMan	2-Jones	SW SE NW 20-9-6 E	
Prairie-Slick	1-Harjo	SW NW NE 9-6-6 E	
Stephens County			
Pace-Texhoma	7-Houston	NEc SW NE SW 2-2-8 W	
Waggoner County			
Finefield	2-Crow	NWc NE NE SW 22-16-19 E	
Smith-Kinsley	1-McCray	NWc 27-17-17 E	

KANSAS

Company	Well No. & Farm	Location	
Butler County			
Durham et al	1-Durham	SW SE SE 16-29-4 E	
Dixie	1-Stern	SE SW SE 28-27-6 E	OWD
Empire	20-Hess	SW SE NW 18-26-5 E	
Empire	93-Koogler	NE SW NE 20-26-5 E	
Ellis County			
Phillips	1-Schneider	SEc 18-12-17 W	
Greenwood County			
Empire	7-Hoggart	NE SW NW 9-25-13 E	
Bisagno et al	2-Gilroy	SEc SW SW NW 5-25-13 E	
Empire	6-Patterson	NWc SE 36-23-11 E	
Empire	3-Norton	SW SE NE 22-22-12 E	
McPherson County			
Empire	3-Voshell	SW SE NE 9-21-3 W	
McBride	4-Voshell	NEc 9-21-3 W	
Gypsy	1-Krehbiel	SWc 3-21-3W	
Gypsy	2-Stuckey	SW NE NW 10-21-3 W	
Gypsy	1-Stuckey	SW SE NW 10-21-3 W	
Sinclair	4-Voshell	NWc 10-21-3 W	
Derby	4-Stuckey	NWc 9-21-3 W	
Mid-Kansas	3-Voshell	SE SW NE 9-21-3 W	
Derby	3-Stuckey	NE NW SE 9-21-3 W	
Mid-Kansas	4-Voshell	SWc NE 9-21-3 W	
Mid-Kansas	2-Voshell	NWc NE 9-21-3 W	
Independent	1-Sperling	NEc SW 9-21-3 W	
Gypsy	1-Stuckey	SEc SW 4-21-3 W	
I. T. I. O.	1-Voshell	NEc NW 9-21-3 W	
I. T. I. O.	2-Voshell	SE NE NW 9-21-3 W	
Dixie	1-Voshell	NE SE NW 9-21-3 W	
Dixie	2-Voshell	SEc NW 9-21-3 W	
Barnsdall	1-Krehbiel	SWc SE 4-21-3 W	
Russell County			
Empire-Prairie	1-Krug	SW NW NW 24-15-14 W	
Marland Inc	1-Maer	NEc NW 8-15-14 W	
Sedgwick County			
Wentz	5-Bright	NW NE NW 1-26-1 W	OWD
Sumner County			
Sun Ray	1-Neal	SEc 29-31-1 W	

TEXAS

NORTH CENTRAL & EAST CENTRAL

Company	Well No. & Farm	Location	Survey
Brown County			
Green Prod	2-McCulley	Blk-53	Thom
Green Prod	3-McCulley	Blk-53	Thom
Paramount	2-Guyer	Sec-22	HT&B
Gunn Prod.-Prairie	1-Dickens	Blk-150	Mitchell
Callahan County			
Holden et al	4-Cavanaugh	Blk-98	Comal Co. Sch. Ld.
Ewmo	9-Beasley	Sec-25	D&DA
Ewmo	10-Beasley	Sec-25	D&DA
Ewmo	1-Finley	Sec-75	BOAL
Coleman County			
Smith	1-Switzer	Blk-279 Sec-8	Farris
Donnelly et al	1-Mead	.....	Clow
Eastland County			
Morris Bros	1-Williams	.....	Frells
Jones County			
Clark et al	2-Newman	Sec-52 Blk-18	T&P
Shackleford County			
Big States	5-Webb	Sec-27 Blk-11	T&P
Coleman-Stiles	2-Clark	Sec-2	BAL
Grisham-Hunter	5-Davis	Sec-20 Blk-13	T&P
Hart-Wright	5-Clark	Sec-2	BAL
Humble	1-Jackson	Sec-95 Blk-12	T&P
Klinger Bros. et al.	1-Muse	Sec-1	BAL
Roberts-Pool	1-Mathews	Sec-29	ET
Simms	11-Lones	Sec-64 Blk-11	T&P
Stephens County			
Universal	1-Corbett	.....	Campbell
Throckmorton County			
Swenson	1-Swenson	Sec-173	BBB&C

NORTH TEXAS

Company	Well No. & Farm	Location	
Archer County			
Burns	9-Turbeville	Blk-152	Carson
King	2-Portwood	Sec-2411	TE&L
Hunter	1-Kunkel	.....	Stell
United Prod. et al.	2-Lyles	Sec-2	SP
Dawson	1-Kalb	Sec-116	Harris
Consolidated-Petroleum Prod.	1-Portwood	Sec-1579	TE&L
Baylor County			
Consolidated	9-Portwood	Sec-3139	TE&L
Consolidated	7-Portwood	Sec-1281	TE&L
Consolidated	8-Portwood	Sec-1281	TE&L
United Prod. et al.	1-Portwood	Sec-1280	TE&L
Madden et al	1-Fandiver	Sec-19 Blk-45	H&TC
Barnsdall-King	1-Mills	Sec-2414	TE&L
Clay County			
By-State	1-Amer. Ref. Co.	Blk-137	Byers Bros.
Merrick-Belcher	2-Landrun	Blk-5	Parker Co. Sch. Ld.
Cooke County			
United Prod	1-Johnson	.....	Clark
Wichita County			
Pace	1-Kidder	Blk-322	Waggoner
Holcomb-Jones	1-Obenhaus	.....	MEP&P
Barkely-Meadows	1-Howell	.....	Giles
Hobbs	2-Hodge	Blk-32	KWVFL
United Prod	10-Hodge	.....	HT&B
Hunter	E2-Waggoner Bros.	Sec-1 Abst-528	GC&SF
Wilbarger County			
Dixie	M1-Waggoner	Sec-4 Blk-5	H&TC
Young County			
Coleman-Shaw	1-Wilson	Sec-153	TE&L
Pennell-Smith	1-Jones	Sec-60	TE&L
United Prod.-Nix	1-Leberman	Sec-151	TE&L
Bridwell	1-Wolf	Sec-165	TE&L
Perkins-Cullum	5-Deitrich	.....	Stell
Brashear	1-Clark	Sec-209	TE&L

PANHANDLE

Company	Well No. & Farm	Location	
Gray County			
Magnolia	1-Cubine	Sec-36 Blk-25	H&GN
Operators	1-Eddington	Sec-34 Blk-B-2	H&GN
Hutchinson County			
Skelly	1-Byrd	.....	Luce
Phillips	1-Mayer et al.	Sec-37 Blk-Y	A&B
Phillips	1-Hood-Johnson	Sec-68 Blk-46	H&TC
Devore et al. & Barnum	1-Johnson	Sec-28 Blk-Y	A&B
McElroy	9-Cockrell	Sec-4 Blk-B-3	D&SE
Moore County			
Operators	1-Jones	Sec-164 Blk-3-T	T&NO
Gulf Prod	1-Kilgore	Sec-22 Blk-PMC	EL
Wheeler County			
Edwards et al	1-Cates	Sec-73 Blk-23	H&GN
Upham	1-Finley	Sec-66 Blk-17	H&GN
Martin-Debons	B3-Close	Sec-83 Blk-23	H&GN

WEST TEXAS

Company	Well No. & Farm	Location	
Crane County			
Warner-Quinlan	8-Univ.	Sec-39 Blk-30	Univ.
Howard County			
Continental	3-Overton	Sec-5 Blk-32	T&P
Continental	2-Overton	Sec-5 Blk-32	T&P
Humble	9-Clay	Sec-138 Blk-29	W&NW
Humble	10-Clay	Sec-138 Blk-29	W&NW
Schermerhorn	A7-Roberts	Sec-137 Blk-29	W&NW
Ward	23-Roberts	Sec-137 Blk-29	W&NW
Mitchell County			
Magnolia	7-Foster	Sec-17 Blk-29	T&P
Pecos County			
Taylor-Link	13-Univ.	Sec-13 Blk-18	Univ.
Taylor-Link	14-Univ.	Sec-13 Blk-18	Univ.
Landreth Prod	F3-Univ.	Sec-31 Blk-16	Univ.
Upton County			
Humble	A14-Ricker	Sec-5	Denton

First Cross-Section of Regional Series Is Completed in Oklahoma

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, Jan. 11

IT IS now but a question of a short time before the regional correlation of subsurface formations in the Mid-Continent will be in readable form for the layman. An illustration of this new form is shown herewith in the presentation of the first completed cross-section of a series that is being made by the geologists of Oklahoma. Thirty-four such drawings are to be made in the state and when the set is finished, an area of nearly 12,000 square miles will have been surveyed in this manner.

A little study of the accompanying cross-section will give some idea of the immense amount of geologic information that it contains. From R 2 E to R 10 E it graphically pictures the sub-surface strata as found in an east-west line along Twp. 8 N. From Yeager and Wewoka, two of the older pools of the state, it passes through four pools of the Seminole area and terminates in a dry wildcat in R 2 E, a distance of 50 miles.

The datum plane chosen does not permit the showing of local structures as they exist today, but for purposes of correlation this is not necessary. In fact, the use of the top of the "Calvin Series," instead of some other horizon, as a datum, makes the reading of the depositional geologic history of the region somewhat simpler for the uninitiated. Changes in formations, as regards their thickness and extent, are much easier to follow.

It will be noted that the wavy lines indicating unconformities extend across the lower half of the section immediately above two different horizons. The lower of these is found between the Hunton lime of upper Silurian and the Woodford shale of lower Mississippian, and the other is immediately below the Cromwell sand of lower Pennsylvanian age. Both represent erosional periods following regional uplifts.

This uplift tipped the beds in much the same way as they appear in the cross-section. The land in the west, and to the west, of the drawing, was raised considerably higher than was that to the east. Following this movement, the sea came in slowly to deposit, in progressive overlaps, the beds as shown on the east above the Caney shale.

These beds, the Cromwell, Dutcher, Gilcrease, Booch and Bartlesville, thin toward the west until they reach the old land mass. There they pinch out at points representing the old shore lines of the encroaching sea. This accounts for their non-appearance in the well logs to the west. It was not until Calvin time that the sea closed over the top of the uplift.

The thickness of the beds above the upper unconformity, as represented in log No. 7, is approximately four times that of those below this line. Yet the time required to deposit them was infinitely less than the long periods necessary for the formation of the lower strata. The upper beds, being largely sandstone, indicate a rapid deposition such as is found in a shallow rough sea, while those in the lower section are the slowly laid down limestones and shales of quiet semi-tropical waters.

The most interesting of the 19 graphic logs used in making this cross-section, is No. 12. The lower portion of it presents the record of the only well in the Seminole area to be carried through the Simpson and well into the Arbuckle, or "Siliceous Lime." If this horizon is

A Valuable Contribution

THE newest cooperative movement among oil companies of the Mid-Continent is the compilation of a great mass of geologic data. The ultimate goal of the project is the completion of a series of 100 or more regional cross-sections. All will be similar to the one illustrated in the accompanying article, though each will cover a different area.

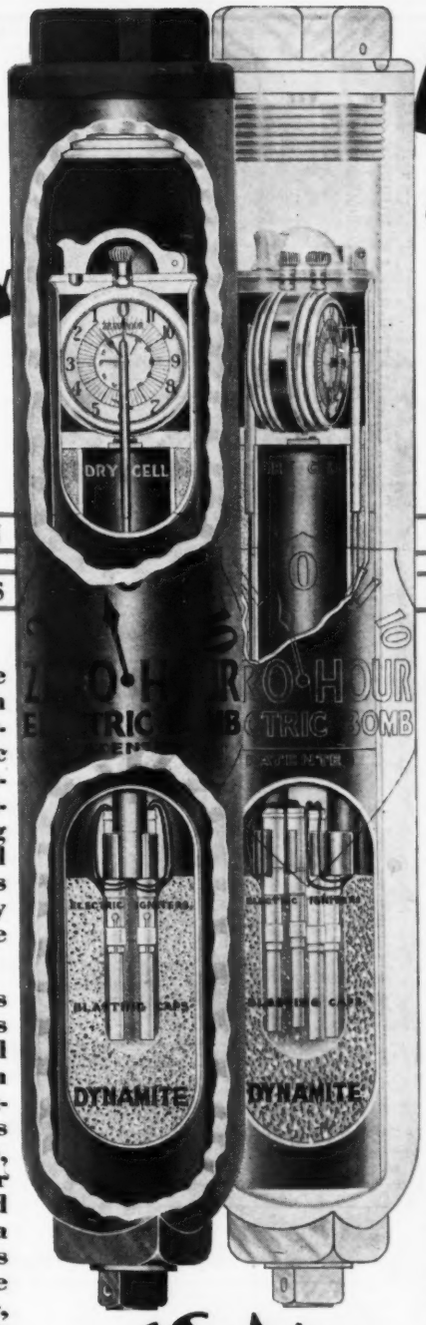
The plan is an ambitious one and its value to the petroleum industry, as well as to science, is obvious. It owes its existence to the cooperation between the geological departments of different oil companies. Here is a move in the right direction.

To have in the office a completed series of cross-sections, such as is planned, would place that oil company in possession of the best subsurface correlations in the Mid-Continent. The fact that the series will represent the combined efforts of the geological departments of many companies, raises it considerably above the plane of just good business. It becomes a great contribution to the science of geology.

The form in which the drawings are presented is also deserving of attention, particularly from the standpoint of the layman. Most of the confusing details of the old correlation charts are ironed out and the salient geologic facts are graphically presented.

The new regional type-section drawings will help to clarify many a hazy point. It is to be regretted that only too often a reader who really needs the information they contain will pass anything that looks like them, as being unintelligible. They should not be looked on as only another tool for the geologist and his profession, for they can be studied with profit by anyone sufficiently interested to try it—W.F.L.

SUPER DESIGN WINS ..... POPULARITY



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A principle of operation as simple as that of a pocket flashlight controls the firing of this bomb—electrical contact. The pressing of a button closes a circuit and lights the flashlight. In the bomb, the circuit is closed by the action of a watch, keeping regular time, until its hour hand touches the firing pin located at the "zero hour," indicated by a red "0" on the watch face. At this point the bomb explodes, the same as the flashlight lights. A novice, who need only know what a watch and battery are, and hardly that, by following the direction sheet which comes with every Zero Hour Bomb, may set and load a Zero Hour Bomb with perfect ease and safety—and with added assurance, in the new Duplex Zero Hour Bomb, of double dependability.

The same size container that formerly held the original Zero Hour Bomb, with one watch and one set of blasting caps, now holds the Duplex, with two watches and two sets of blasting caps. Duplication of the vital working parts of the bomb, namely the watch and its firing connection with the blasting caps, forms the Duplex principle. Thus, two complete timing and firing mechanisms, each independent of the other, are enclosed in the same metal, fluid-tight container that formerly held one only, reducing the chance of a failure with the new Duplex Bomb to a figure so small that it is almost beyond computation in ordinary mathematics. In setting, this means only the winding and setting of an additional watch, identical with the first one, followed by the attachment of an additional igniter and blasting caps. This attachment has been simplified by a plug and socket connection, making it like plugging in an electric light cord in the wall and insuring perfect electrical connections. A gold spring firing pin, with tempered flexibility, holds accurately to the "0" firing point, no matter how often the hour hand passes either forward or backward across it, in testing. A denotating device that operates on such a logical, time-tested principle as that found in a flashlight, and controlled by such a symbol of dependability as a pocket watch, provides the same logical assurance of dependable results, sponsoring marked efficiency and economy.

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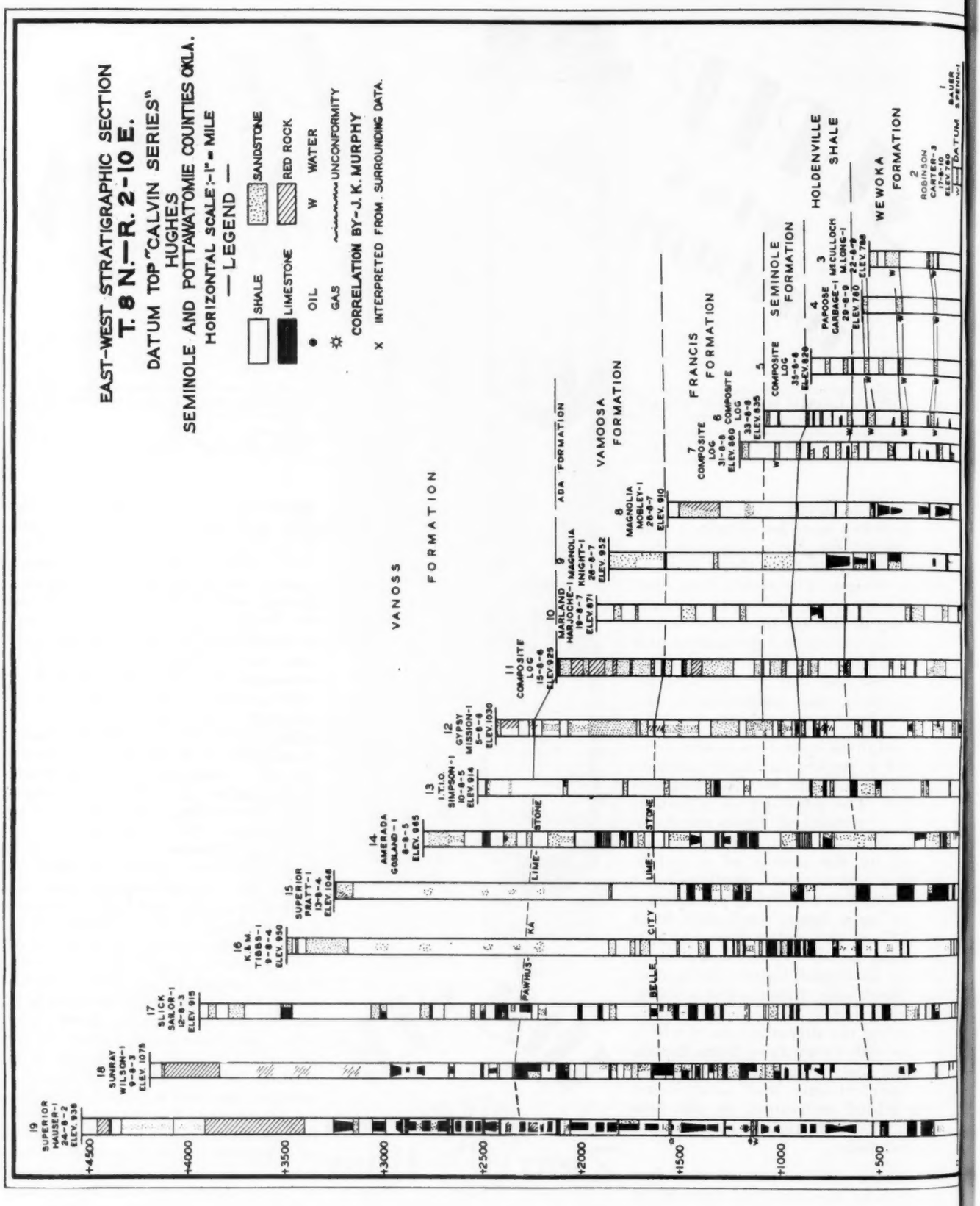
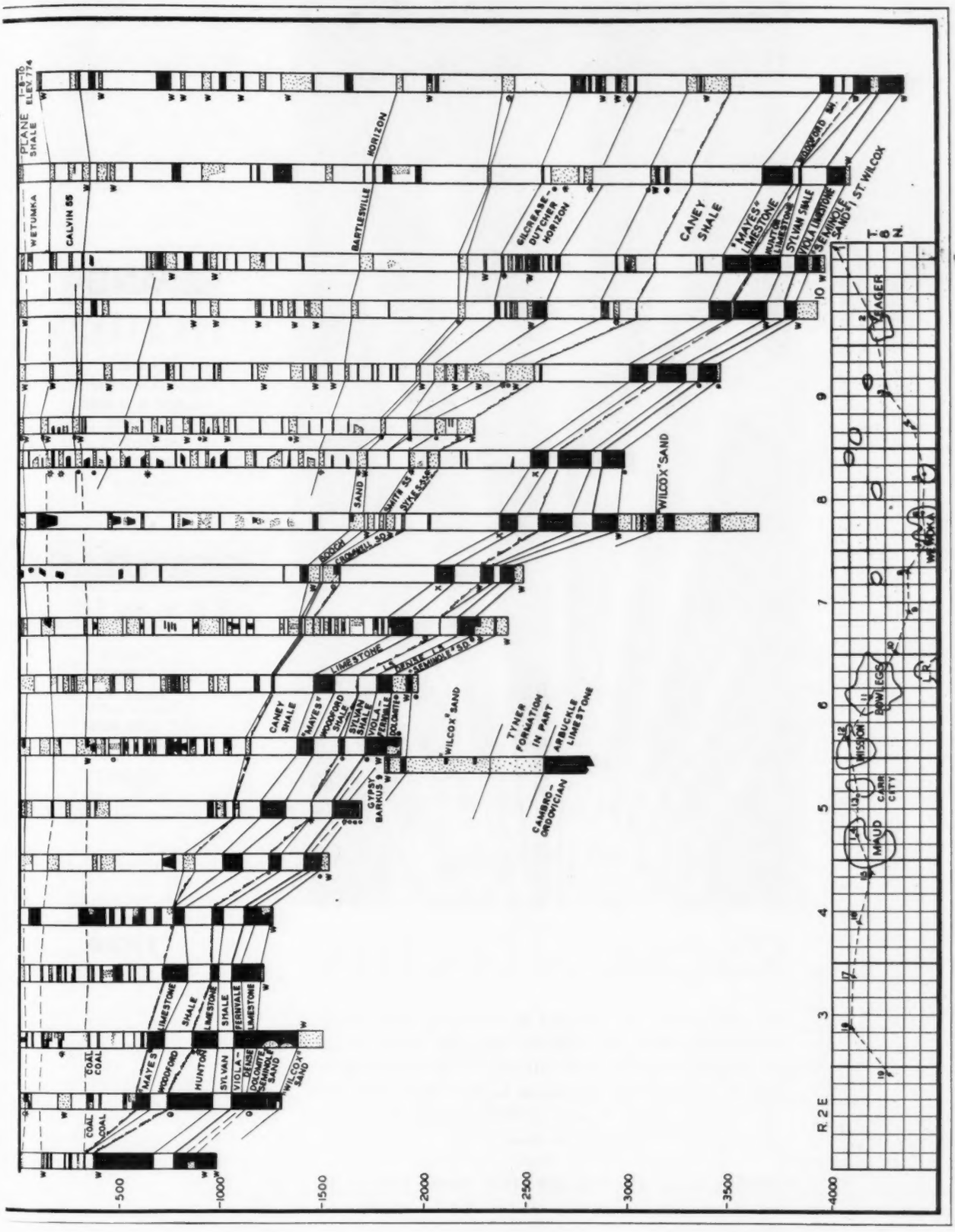


productive of oil in anything like the quantity found in it at Oklahoma City, "Greater Seminole," the name by which the area has come to be called, will be one of considerably more significance.

This well, the No. 9 Barkus of the Gypsy Oil Co., in 5-8-6E, is drilling at 5703 with 5000 feet of water standing in the hole. The Arbuckle was topped at 4980 and the water was found in that formation. It was chosen for a deep test because it had logged higher on the Wilcox than any other well in the Mission pool, which gave rise to the conclusion that it might also be atop a structural high of the "Silicious Lime." The well cannot yet be said to be a conclusive test, though it seems to cast some doubt on the possibilities of production from this horizon in the Seminole area.

The phrase "Tyner in part" appearing at the lower end of log No. 12 is an illustration of the care that was taken to make the correlations

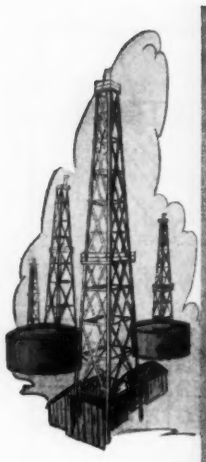


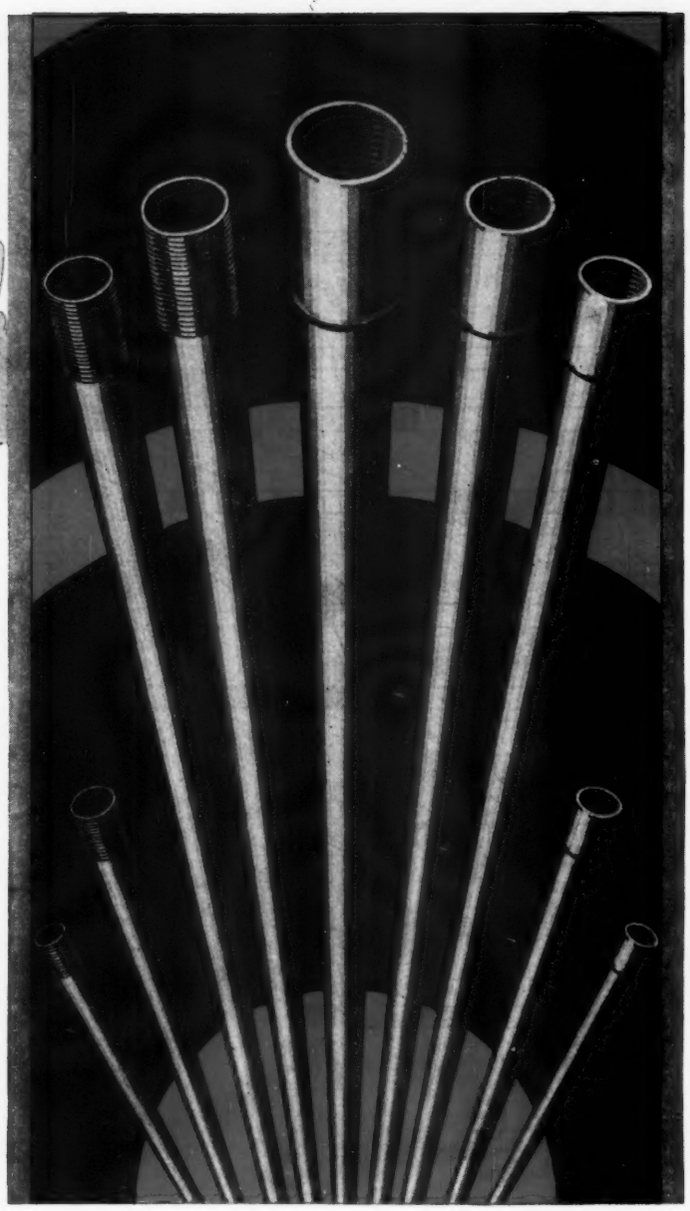
as accurate as possible. In this case there was a question as to the exact relationship of this bed to the Tyner as found at Talequah in northeastern Oklahoma. The name given to the formation in the cross-section then was qualified to indicate a doubt.

It will be noted that the first six logs show correlations in their upper sections that do not appear in those to the west.

The reason for this is that they were drilled with cable tools and the others by the rotary method. To the geologist, the advent of and the increasingly widespread use of rotary tools is a great drawback to definite correlation. To a large extent he is right, for there is no question about the unsatisfactory nature of rotary cuttings for geologic determination of strata.

After even a casual study of this one cross-section it would not be hard for anyone to realize the value of the whole set. The importance of the series becomes increasingly apparent





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when the fact is taken into consideration that three states are included in this huge program, Kansas and Texas, in addition to Oklahoma.

It can readily be seen that the collected type section drawings will eliminate much of the former conjecture concerning the regional position of beds. The complete set will contain an enormous amount of accurate information in a permanent and usable form.

Too much emphasis cannot be put on that last phrase, at least, as far as the layman is concerned. In the past, correlation charts have been the usual method of tying-in the formations of one productive area with another. They were effective to a degree, but as often as not they were more confusing than informative unless there was a geologist in the offing to do a little explaining. Such charts are a little more detailed than is necessary for general purposes and require considerable study.

The new presentations of regional data will not only simplify the work of the geologist, but will go a long way toward clarifying subsurface conditions in the minds of officials and students alike. That they will aid the geologists is indicated by the efforts of these men of science to create them. They will also serve to terminate much of the discussion of recent years on the proper correlation of Permo-Pennsylvanian beds.

Arguments within geologic circles have been heated at times on a number of points and conclusive settlements were rather far apart. In an effort to eliminate these arguments and to arrive at the most logical answers to the stratagraphic questions, the Research Committee of the American Association of Petroleum Geologists began a serious study of the subject.

A sub-committee on Permo-Pennsylvanian stratigraphy, under the direction of Dr. Raymond C. Moore, state geologist of Kansas, was appointed. In the spring of 1928, Dr. Moore called a meeting of Mid-Continent geologists at Norman, Okla., for the purpose of discussing ways and means. Present at this meeting were 30 of the most prominent geologists in the area and out of it came the idea for the most comprehensive cross-section program that has ever been attempted.

To A. I. Levorsen, chief geologist of the Independent Oil & Gas Co., must go the credit for the original suggestion. He was immediately appointed chairman of the cross-section committee. It is not known whether this honor was conferred for conceiving the idea or for daring to suggest that so ambitious a study could be made, but one is safe in concluding that everyone present realized the magnitude of the task.

Aided by Robert H. Dott, chief geologist of the Sunray Oil Co., Mr. Levorsen at once set about gaining the necessary cooperation of the oil companies. All companies that participated, and only those, were to receive complete sets of the finished drawings. It is very probable however, that libraries and universities will at some time in the future receive a limited number.

Thirty-four cross-sections were started in Oklahoma by the same number of companies, with the result in view of forming a network throughout the developed areas of the state. Twenty-five of these are to be east-west sections along Twps. 5 to 29N inclusive, and the remainder are to be north-south drawings between R 3 W and 15 E. Sections of the first group are six miles apart while those of the latter have approximately 16 miles between them.

Each company was assigned one cross-section and though the work has progressed slowly, enthusiasm for the project has been growing as the importance of the results was realized. The geological departments of these companies have been doing some really remarkable cooperating in the preparation of the correlations. Without this information trading relationship, the compilation of the great mass of data would have been an almost impossible task.

Frequent meetings were held by the geologists to exchange information and work out the myriad details. Every cross-section is drawn to the same scale and the same symbols and lettering are used in order that all drawings may be uniform. To produce the redrawn photostatic copy shown herewith the horizontal scale was automatically reduced. The copy has but one-sixth the width of the original though the former scale is still shown. It was also necessary to change the lettering. The style is the same but its size was slightly increased to make the words more legible.

For the most part only the developed areas are covered and the logs used were very carefully selected. In some instances they are composites and in others the result of close examination of samples. In so far as it was possible to do so, the subsurface formations are correlated with the surface outcrops. This one feature will do much to remove some of the existing confusion which has resulted from the fact that some beds have different names in different localities.

Ten of the Oklahoma cross-sections are now complete and 10 others are almost ready for blue-printing. Work on the others is being rushed by the companies that are a little behind schedule, even though it requires the services of extra men.

In Kansas similar progress has been made under the direction of R. B. Rutledge, district geologist of the Skelly Oil Co. Geologists of that state have only 25 cross-sections to make and should have many of them in the last stages of completion by this time. Their north-south drawings, from the Nebraska line and from Lawrence, Kansas, when pieced with those of Oklahoma which extended as far south as McAlester, will show the subsurface transition in an area nearly 350 miles long.

Texas is also included in this vast program and will eventually make its contribution. At the present time however, the geologists there are busy cooperating on another idea. They

(*Continued on Page* 83)

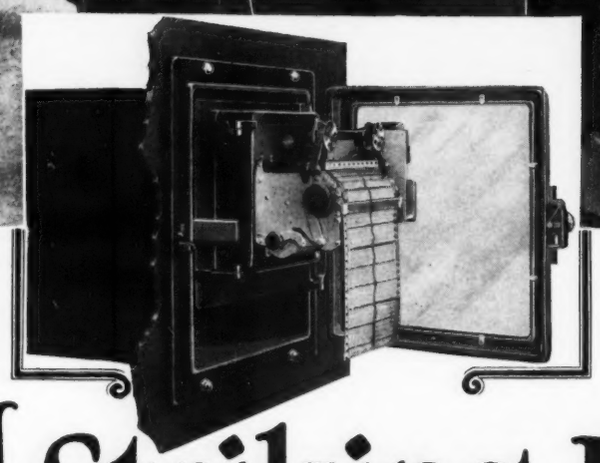
The complete list of the companies and their geologists who are cooperating to make a success of the cross-section project in Oklahoma.

EAST-WEST CROSS-SECTIONS

Company	Location	Geologist
Atlantic O. & R. Co.	Tulsa	Ed Luman
Barnsdall Oil Co.	Tulsa	E. A. Markley
Burke-Greis Oil Co.	Tulsa	Dick Hughes
Carter Oil Co.	Tulsa	H. H. Martin
Dixie Oil Co.	Tulsa	Ed Shea
Elson, W. H.	Tulsa	Howard Conhaim
Empire Gas & Fuel Co.	Bartlesville	F. T. Clark
Foster Oil Co.	Tulsa	L. G. Kepler
Gypsy Oil Co.	Tulsa	Constance Eirich
Hull Oil Co.	Tulsa	Luther White
Independent Oil & Gas Co.	Tulsa	A. I. Leverson
Independent Oil & Gas Co.	Tulsa	J. K. Murphy
I. T. I. O.	Bartlesville	
Mid-Continent Oil Co.	Tulsa	H. W. Peabody
Mid-Kansas Oil Co.	Tulsa	L. L. Foley
Minnehoma Oil Co.	Tulsa	W. W. Keeler
Peters Petroleum Co.	Tulsa	Jack Ross
Prairie Oil & Gas Co.	Tulsa	J. E. Miller
Pure Oil Co.	Tulsa	A. D. Langworthy
Shaffer Oil & Rfg. Co.	Tulsa	
Sinclair Oil & Gas Co.	Tulsa	Coler Yoakum
Texas Co.	Tulsa	J. N. Troxell
Transcontinental Oil Co.	Tulsa	R. E. McMillan
Twin State Oil Co.	Tulsa	R. J. Cullen
White Eagle Oil & Rfg. Co.	Tulsa	T. M. Ragsdale

NORTH-SOUTH CROSS-SECTIONS

Amerada Petroleum Corp.	Tulsa	Jess Vernon
Bloesch, Ed.	Tulsa	Ed. Bloesch
Continental Oil Co.	Ponca City	
Peerless Oil Co.	Tulsa	C. G. Carlson
Shell Petroleum Corp.	Tulsa	Frank Greene
Silurian Oil Co.	Tulsa	T. C. Hiestand
Skelly Oil Co.	Tulsa	Earl Trager
St. Germain Oil Co.	Tulsa	C. C. King
Tidal Oil Co.	Tulsa	T. F. Weirich



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Modern Refining—Science and Practice

By Colonel George A. Burrell*

Article 6

Cracking of Paraffins; Temperature—Time Factors; Secondary Reactions

IN THIS series of articles there will be presented experimental data covering the cracking of the paraffins, olefins, naphthenes, aromatics and acetylene. Also the cracking of different kinds of charging stocks at different temperatures, pressures and time. The effect of these variables are discussed and also the relationship of data on the pyrolysis of the pure hydrocarbons to practical cracking operations. Nernst's heat theorem is invoked to foretell reaction products, and hydrogenation is discussed.

Cracking of the Paraffins

The laboratory cracking of hydrocarbons began with John Dalton[1] who subjected ethylene and methane to the action of electric sparks, but Berthelot[2] made the first extensive study of the subject. He decomposed acetylene, ethylene, benzene, diphenyl, xylene, and other hydrocarbons with and without catalysts and presented the first comprehensive theory on the mode of decomposition of hydrocarbons by heat.

One of his achievements was the polymerization of benzene from acetylene. Berthelot had rediscovered the element acetylene in 1859, and in his thermal theories gave this element a prominent role, a view that was later dispelled by Haber, Bone and others.

Thorpe and Young's[3] work was important in showing the mode of decomposition of the paraffins at moderate temperatures. Paraffins produced olefins and paraffins; no coke. In the lower fractions the amount of the paraffin was equal to the olefins. In the higher fractions there was an increase in the paraffins. This work, in general substantiated by many following investigators, is of importance as applied to commercial cracking operations.

Norton and Andrews,[4] in 1886, cracked pentane, hexane and isohexane. Decomposition began at 600 C. and at 700 C., amylene, hexylene and butadiene were noted. At higher temperatures aromatics formed.

Haber,[5] in 1896, cracked n-hexane at 600 to 800 C. (1112-1472 F.) and concluded that methane was eliminated with the formation of a large olefin. $CH_3 . CH_2 . CH_2 . CH_2 . CH_2 . CH_3 = CH_3 . CH_2 . CH_3 . CH{:}CH_2 + CH_4$.

Thus we have far reaching generalizations at an early date; the production of olefins and paraffins with no coke formation when paraffins are primarily cracked. This happens in practical cracking operations. The more paraffinic the stock the less the amount of coke that is formed, and scores of investigations and hundreds of practical cracking tests have attested to the presence of paraffins and olefins in cracked products.

At high temperatures or over a long time, secondary, tertiary and subsequent reactions occur so that the final result is not the result of a primary dissociation, but of the action of heat on substances formed by prior cracking. Thus the products tend to become of common character. As the temperature is raised higher and higher, or the time of heating prolonged, the end products of all hydrocarbons are identical; carbon and hydrogen.

Haber also noted a tendency toward polymerization at all elevated temperatures. This we know happens in all cracking operations. Haber also found that aromatics formed more complex substances, and this too is a phenomena noted in the practical cracking art.

Aromatic charging stocks are notorious coke formers, and later investigators than Haber have given the aromatic portion of any charging stock, or aromatics formed in the cracking operation, a leading place in coke formation, due to condensation reactions.

The terms polymerization and condensation are frequently used in discussing cracking phenomena. There appears to be no definite line that can be drawn between the two. In cracking terminology there is a tendency to restrict the term condensation to the union of heavy residuum and coke forming molecules at high cracking temperatures, and the term polymerization to the formation of bodies, from olefins say, at lower cracking temperatures.

Organic chemists sometimes use the term polymerization when the product is of high molecular weight and unknown composition as in the case of the relation of cellulose to glucose. Sometimes condensation is defined as the union of molecules to form larger molecules with the splitting out of some small molecule like water. Thus the union of two molecules of acetaldehyde to form crotonaldehyde was regarded as a typical condensation reaction. But this is faulty because the two molecules of acetaldehyde unite first to form acetdol. The change of the latter to crotonaldehyde is merely a subsequent dehydration.

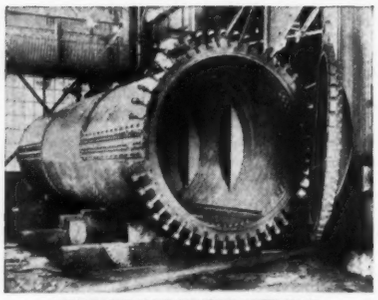
A text book definition sometimes given of polymerization is the union of molecules to form larger ones of the same percentage composition, and in the case of condensation the union of unlike ones. The former is faulty because W. H. Carothers, of the Dupont company worked with polyesters in which dibasic acids and polyalcohols unite to form esters of very high molecular weight. In this union water is eliminated as in the case of the union of any acid with an alcohol.

[1]Phil. Trans. Roy. Soc., 99, 446, 1809.
[2]Compt. rend., LXII, 905, 947, 1866 and other papers.
[3]Proc. Roy. Soc., 19, 370, 1871; 20, 488, 1872.

*Consulting Chemical Engineer, Pittsburgh, Pa.

[4]Amer. Chem. Jour., 8, 1, 1886.
[5]Ber., 29, 2691, 1896.

Oil Refining Equipment



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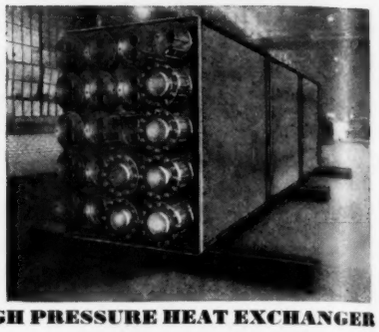
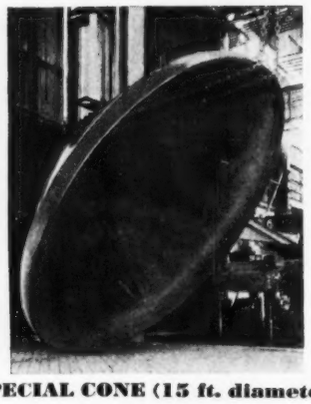
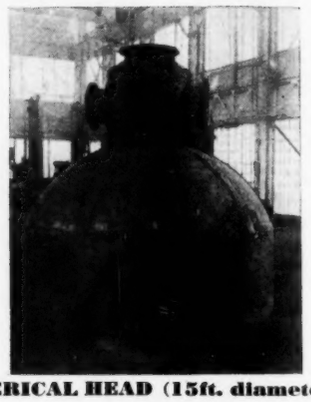


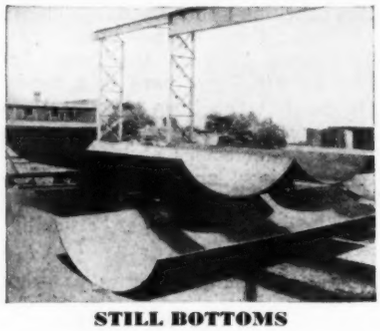
HIGH PRESSURE HEAT EXCHANGER



SPECIAL CONE (15 ft. diameter)

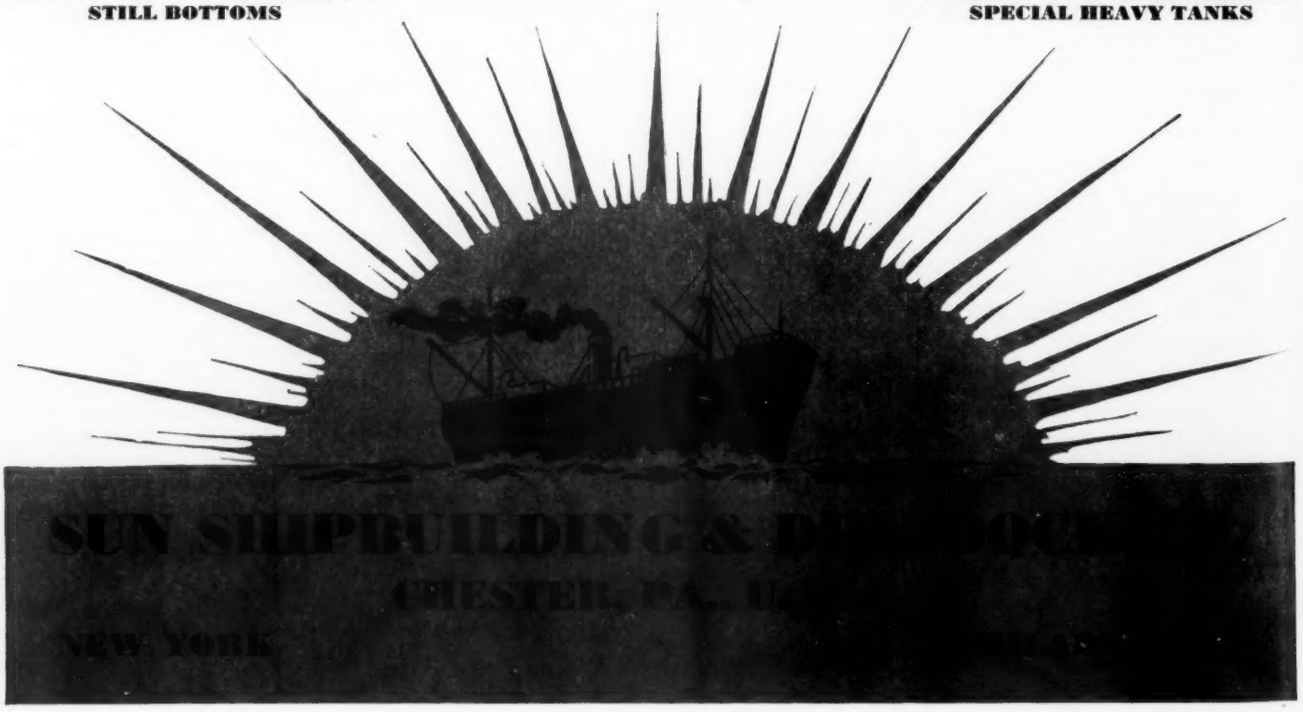


SPHERICAL HEAD (15ft. diameter)



STILL BOTTOMS

SPECIAL HEAVY TANKS



The only definite thing about the entire phenomena seems to be that the products have a high molecular weight. In this series of articles the terms will be used as adopted by various experimenters whose work is quoted, or in accordance with the general trend. An early case of polymerization or condensation was that of the union of acetylene to form benzene, brought about by Berthelot.

Haber generalized that there is lack of equilibrium in the cracking reaction. As far as we know we believe this to be so. As long as cracking occurs in a still further reactions keep taking place until the temperature falls to a point where they are checked. Modern investigators recognize, however, a form of equilibria, called quasi or instantaneous equilibria, of fleeting existence, that may be of importance. For instance, Pease and Durgan[6] measured equilibria in the system $C_2H_6 \rightleftarrows C_2H_4 + H$ at 600, 650 and 700 C., and Field[7] and others have postulated equilibria at steel making temperatures. In other words at any particular instant a system is thermodynamically stable at a certain temperature, although changes take place at the next instant.

Both carbon and hydrogen are final end products in any hydrocarbon decomposition, and coke is an end product in commercial cracking systems, but it is not likely that coke will enter into reversible reactions at cracking still temperatures. Carbon does so, of course, in the reaction:

$$CH_4 \rightleftarrows 2H_2 + C,$$

even at relatively low temperatures, given time enough, but coke is of complex aromatic structure; not carbon.

We know that equilibria can be calculated, given the necessary data, using Nernst's heat theorem (third law of thermodynamics) and that the reaction products so determined agree quite well with the results of commercial and experimental cracking work. By means of the third law one can predict from thermal data alone whether or not any conceivable reaction can actually proceed, which of several possible reactions leads to the most stable state of the system, the magnitude of the driving force tending to cause the reaction to proceed, and the condition of equilibrium in the system for the reaction under consideration. It predicts nothing regarding the rate of reaction.

Bone and Coward[8] decomposed methane, ethane, acetylene and ethylene. They were the first to take careful cognizance of the time factor in cracking hydrocarbons. They found that 6 hours was required to decompose 98 per cent of ethane at 675 C. (1247 F.) whereas only 5 minutes was required at 800 C. (1472 F.). This follows the general rule of 18 F. rise for double the cracking, a rule that approximately prevails in all reactions with rise in temperature.

They found that methane was the most stable of the hydrocarbons considered, and is always a principal product of the decomposition of the other three. It decomposes to carbon and hydrogen and the process is probably reversible at all temperatures and is chiefly a surface phenomena. It yields a lustrous hard carbon, different from the soft variety yielded by the other three hydrocarbons, except as secondary reactions produce other hydrocarbons, they in turn forming carbon.

Bone and Coward took exception to Berthelot's theory of a complex equilibrium state in cracking hydrocarbons, and formulated a theory of fugitive nascent radicals, $:CH_2$ and $:CH$, which enter into cracking reactions. This wasn't entirely new for Nef about 1890 already had advanced his theory of organic fragments in which carbon had a valency less than four, and founded a system of chemistry thereon.

Young and Thorpe thought the affinities of the $—CH_2$ groups were loosened when paraffins were cracked. Bone and Coward concluded that ethylene and ethane, for instance, would form $H_2C : CH_2$, and $HC:CH$, and break down to carbon and hydrogen. Nellensteyn[9] suggested for ethane and ethylene the radicals,

Ethane	$C_2H_6 = 2.CH_3$
	$CH_3 = :CH_2 + H$
Ethylene	$C_2H_4 = 2:CH_2$
	$:CH_2 = :CH + H_2$

Bone and Coward's cognizance of the time factor in cracking reactions, a factor neglected by most investigators, including some modern ones, their general work on the gases at high temperatures, and their advancement of the fugitive radical theory, are considered milestones in investigation work covering the decomposition of hydrocarbons.

Calingeart,[10] in 1923, decomposed normal and isopentane and found the percentage of hydrogen, unsaturates, and methane, to increase gradually up to 750 C. (1382 F.) at which temperature aromatic formation began.

Zanetti[11] had arrived at about the same conclusion in 1916. He decomposed a mixture of butane and propane. Unsaturated hydrocarbons increased to a maximum at 750 C. (1382 F.) beyond which aromatic formation began. The unsaturates then decreased to virtually zero quantity at 1000 C. (1832 F.). Hydrogen increased rapidly at the higher temperatures. Ethylene was the principal unsaturated substance. Butadiene was formed.

One can pass over a considerable list of investigators who cracked paraffins. For an intensive study of the subject some of the work should be studied. Mention should be made of Sachanov's[12] and Tillicheev's work. They cracked paraffin wax at 425 C., and 10 atmospheres and found no coke or other condensation product and no hydrogen. Fifty per cent unsaturates and 50 per cent saturates were formed. Increase in pressure decreased the unsaturates as determined with iodine.

Here at this late date we find further substantiation of Thorpe and Young's work; saturates, unsaturates and no coke, at moderate temperatures. The decrease in unsaturation with increase in pressure is to be noted. The significance is practical and will be discussed later in this series of articles.

The most searching work on the unbranched paraffins from methane to hexane has been done by Hague and Wheeler.[13] They suggest as primary decomposition products the following typical reactions:

$$C_2H_6 = C_2H_4 + H_2$$
$$C_3H_8 = CH_4 + C_2H_4$$
$$C_3H_8 = H_2 + C_3H_6$$
$$C_4H_{10} = C_2H_6 + C_2H_4$$
$$C_4H_{10} = CH_4 + C_3H_6$$
$$C_4H_{10} = H_2 + C_4H_8$$
$$C_6H_{14} = CH_4 + C_5H_{10}$$

Their general conclusions are:

(a) For all the paraffins the temperature range, 700 to 750 C. (1292 to 1382 F.) is a transition one. Below this each hydrocarbon follows its own course, but at higher ones, secondary reactions are similar to all.

(b) Aromatic hydrocarbons were obtained over the range 650 to 1000 C. (1202 to 1832 F.)

(c) Primary decomposition of all the hydrocarbons indicates rupture of the chain at any position with the production of an olefin and the complementary lower paraffin, or at the limit, hydrogen.

(d) As the series ascends the tendency for hydrogen to be eliminated leaving an olefin with the same number of carbon atoms as the original paraffin rapidly diminishes.

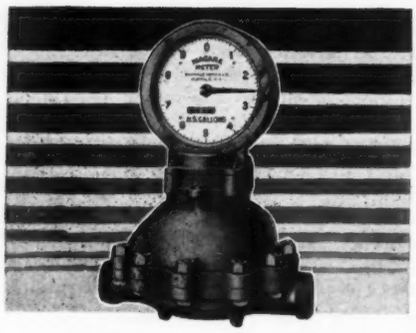
A typical series of gas analyses made by them on the products of decomposition of propane follows:

	700 C. 1292 F.	850 C. 1562 F.	1000 C. 1832 F.
Higher olefins	14.2	2.3	0.5
Acetylene	3.4	2.5	1.0
Ethylene	19.7	14.5	5.8
Hydrogen	11.8	26.6	51.3
Methane	14.1	46.2	36.1

The work of Hurd and Spence, and of Pease, done with funds from the American Petroleum Institute, is noteworthy. It preceded Wheeler and Hague's investigations and is in general agreement with their results.

We next pass on to aromatic for-

[6]Jour. Am. Chem. Soc., Jan., 1927, p. 124.
[7]Trans. Faraday Soc., 21, 7, 1925.
[8]Jour. Chem. Soc., XCIII, 498, 1910.
[9]Jour. Inst. Pet. Tech., 1924, p. 311.
[10]Jour. Amer. Chem. Soc., 1923, p. 130.
[11]Ind. Eng. Chem., 8, 674, 1916.
[12]Ber., 62, B, 658, 1929.
[13]Fuel, 8, 560, 1929.



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mation from paraffins. This requires high temperatures. It was noted by Norton and Andrews in 1886, and by Haber in 1896, although in the early cracking art, 1860 to 1914, scores of investigators cracked petroleums at high temperatures to make aromatics and some of the work assumed a practical aspect. Faraday,[14] in 1825, actually discovered the substance benzene in the products obtained from the cracking of oil.

Davidson's[15] theory of aromatic formation from a paraffin follows:

Paraffin → simple olefin → higher olefin with conjugated bond → aromatics.

Hague and Wheeler[16] elaborated this slightly and suggested that an olefin is formed, ethylene for instance, which polymerizes to butylene and this loses hydrogen to form butadiene, the latter reacting with ethylene to form benzol. Naphthalene is formed by condensation of butadiene with benzol and subsequent splitting off of hydrogen. The formation of anthracene and phenanthrene from naphthalene is similarly explained.

Fischer[17] introduced the time factor as an important element in benzene formation from a paraffin (methane). Others, of course, had encountered it but Fischer gave it a quantitative value. Methane at 900 C. (1652 F.) for instance, will go to the carbon-hydrogen-methane equilibrium and, of course, at lower temperatures also, given time enough, but if the time of heating is shortened to stop the hydrogen and carbon formation, aromatics are obtained.

Napthalene, anthracene, phenanthrene, and other solid cyclic hydrocarbons were found in the tar. Benzol, toluol and zylol were found in the light oils, and methane, hydrogen and acetylene in the gas, as well as other gases. Ninety liters of methane gave 5.7 grams of light oils, 1.1 grams of tar and 3½ liters of unsaturated gases. Fischer gave the radicals $:CH_2$ $:CH_2$ and .CH a prominent place in the reactions.

This stopping of the reaction short of an ultimate product by careful control of the temperature-time factor is encountered in cracking operations. The reaction is checked, by rapidly withdrawing residuum, cooling the cracked products, or expanding them, or some combination of all three expedients.

Others who have worked on aromatic formation from paraffins or natural gas, which is composed of paraffins, are Chamberlain and Bloom,[18] Stanley and Nash,[19] Dunstan,[20] Wheeler and Wood[21] and others. Dunstan obtained 770 gallons of aromatic liquid, boiling point 57 to 150 C., from 1,000,000 cubic feet of natural gas at 800 C. (1472 F.)

We know, of course, that aromatics are formed in considerable quantity in ordinary liquid phase cracking operations, and at much lower temperatures than those listed herein. To make larger quantities one goes to vapor phase operations. Rittman's work during the war in making aromatics from Pennsylvania gas oil in vapor phase operations, was done at 1200 F., and Leslie, in California, worked at 1300 F. Hall, in England, used temperatures of 1380 F.

The quantity made will depend upon the time, temperature, the nature of the charging stock, and type of apparatus employed. Rittman used large tubes and low velocities and employed chain stirrers to knock coke forming material from his reaction tubes. Hall used small tubes and high velocities. Pielsticker, in 1888, recommended high velocities. These tear stagnant films from pipe surfaces. Otherwise the films resist heat flow.

Summary

In summing up paraffin decomposition we are confronted with the fact that practically all investigators have worked on the simple hydrocarbon molecules, principally the gaseous ones. These are easiest to obtain pure, and are more refractory, i.e., start to decompose at much higher temperatures than the heavier ones, (say 600 C. (112 F.) or higher). From a practical standpoint the refiner is interested in the heavy ones. Here, according to Sachanov and Tillicheev, the products of cracking paraffin wax, say, at moderate temperatures results in equal quantities of paraffins and unsaturates; no coke.

When Hague and Wheeler cracked the gaseous paraffins they found as a series of primary reactions the formation of ethane and hydrogen, of methane and ethylene, of hydrogen and propylene, of ethylene and ethane, of methane and propylene, of hydrogen and propylene, etc.

But in general it probably can be stated that moderate cracking of such paraffins as exist in charging stock of cracking plants tends to produce symmetrical cracking of the molecule, with no coke. As the temperature rises or as secondary reactions come into play, olefins increase up to a certain point, as does methane; hydrogen steadily increases, diolefins begin to form, then aromatics and finally coke, which is composed of molecules rich in carbon and poor in hydrogen. Finally at high enough temperatures hydrocarbons decompose into their elements, carbon and hydrogen.

(*Continued on Page* 109)

[14]Phil. Trans., 440, 1825.
[15]Ind. Eng. Chem., 10, 901, 1918.
[16]Jour. Chem. Soc., Mar., 1929, p. 378. Also Fuel, 8, 560, 1929.
[17]Brenn-Chem., 9, 309, 1928.
[18]Before Am. Chem. Soc., Columbus, O., May 2, 1929.
[19]Jour. Soc. Chem. Ind., 48, 1-8T, 1929.
[20]Before Roy. Soc. Arts, England, Jan., 1928.
[21]Fuel in Science and Practice, 7, 535, 1928.

ADVERTISING PAGES REMOVED

New Knock Testing Method Developed At University of Michigan

CLEVELAND, Jan. 13

A NEW method of determining knock ratings is announced by the Department of Engineering of the University of Michigan. This method has been developed by intensive study for three years or more, and embodies the improvements in knock testing developed at that institution during this time.

The Engineering Department also announces that it is now in a position to give certificates of knock rating on commercial motor fuels to oil companies. The determination of knock ratings for the public will be under the supervision of Dr. George Granger Brown, well known among oil men for his researches on motor fuels. This action of the department has come in response to a demand by many purchasers of gasoline that a knock rating be included in specifications for motor fuels, it is said.

The knock rating method employed by Dr. Brown consists essentially in determining, by the use of a variable-compression, single cylinder engine, the compression ratio at which the fuel tested gives a distinct knock. This engine was developed some time ago in the laboratory of the National Advisory Committee for Aeronautics.

One of the new features of the test method of Dr. Brown is the use of an injection pump instead of a carburetor for conveying the fuel into the cylinder; fuel is forced into a mixing chamber to be mixed with a metered quantity of air before entering the manifold. This method insures a more constant and dependable fuel feed than is obtainable with the regulation carburetor.

The knock rating of a fuel is obtained by comparing the compression ratio at which the fuel will knock distinctly with the ratio at which normal heptane knocks, and the result is reported as the ratio of these two compression figures, or as the relative compression ratios of the standard fuel and the fuel tested. Ratings are also reported in terms of benzene-heptane and iso-octane-heptane mixtures, as well as the conventional "benzol value" based on straight run Pennsylvania gasoline. The relationship between these different methods of rating are shown in figure 3 accompanying Dr. Brown's article.

The entire article, with the exception of some preliminary discussion of the history of knock testing, follows.

By George Granger Brown and Harry E. Zuck*

SIX years of experience with as many different single cylinder testing engines, including L-head, valve in head, water-cooled, air-cooled, and evaporative cooling systems have led to the following equipment and method as entirely satisfactory and reliable, although not by any means ideal.

The single cylinder variable compression N.A.C.A. Universal Test Engine used in these tests was developed several years ago in the laboratory of the National Advisory Committee for Aeronautics. It has a five-inch bore and seven-inch stroke and is equipped with an aluminum piston. These dimensions, although larger than necessary, offer an advantage in that the engine is less sensitive to slight changes in operating conditions.

The variable compression feature is made possible by raising or lowering the entire cylinder wall and head which carries the two cam shafts, as indicated in the section Fig. 1. In this manner the compression ratio may be varied from less than 3.5 to more than 14.0 to 1.

At 900 revolutions per minute, at which the knock rating tests are made, this range in compression ratio is equivalent to a variation in compression pressures of from 65 to over 425 pounds per square inch gauge. In addition, the engine is also provided with means for varying independently the valve timing and lift through split cams on the two cam shafts.

Since any or all of these changes may be made while the motor is operating under full load, it is adaptable not only to fuel testing, but also to a study of the change in engine cycles upon efficiency and knocking.

The compression ratios as indicated by a revolution counter on the worm which raises or lowers the head were calibrated by direct displacement of liquid. The compression pressures were carefully determined at 900 revolutions per minute with this valve timing (exhaust opens 33 degrees before bottom dead center, exhaust closes 8 degrees after top dead center, intake opens —8 degrees after top dead center, intake closes—25 degrees after bottom dead center) by an Okill gauge and found to be accurately represented by the following expression:

Compression pressure in pounds per square inch gauge = 34.25 × compression ratio — 56.

For controlling the speed and measuring the power output, the engine is coupled to a 50 horsepower electric cradle dynamometer of conventional design. Although all tests are made with the air-fuel ratio giving maximum knock, the air-fuel ratio is always determined by direct measurement as a check on the setting made for maximum knock.

The air is first drawn past a hygrometer for determining its humidity, then through a Venturi and into a large surge tank to absorb the pulsations of the engine so as to give a steady reading on the Venturi. From the surge chamber the air passes through an electric heater capable of heating the air to 300 F. and then into the mixing chamber leading to the engine.

The fuel handling system has seen many changes during the past three years. The fuel under test is fed from a weighing bottle on scales which automatically start and stop both a total revolution counter and a stop watch while supplying to the engine a pre-determined weight of fuel.

Originally the fuel was sent from the weighing bottle to a single jet carburetor. Although such an arrangement had proved satisfactory on other engines, the inclosed system for measuring the air caused extremely bad surging in the intake manifold, causing poor jet action and resulting in the engine running unevenly, or "hunting." Furthermore, the throttle and needle valve adjustments on the carburetor were found to introduce variables impossible to eliminate.

The carburetor was then replaced with a small positive displacement fuel pump driven from the cam shaft through a Reeves variable speed transmission. The pump served merely to meter the fuel and drop it into the intake manifold or mixing chamber where it was picked up by the air stream. Although rather crude,

*Dept. of Engineering Research, University of Michigan, Ann Arbor.

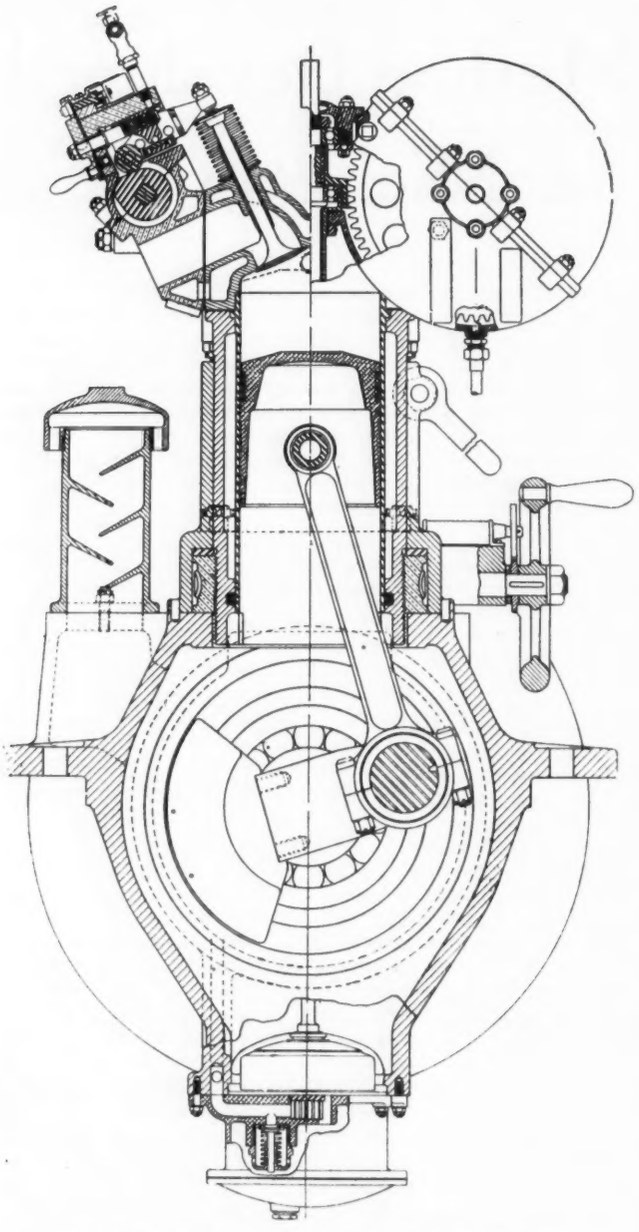


Fig. 1—Section of Universal Test Engine

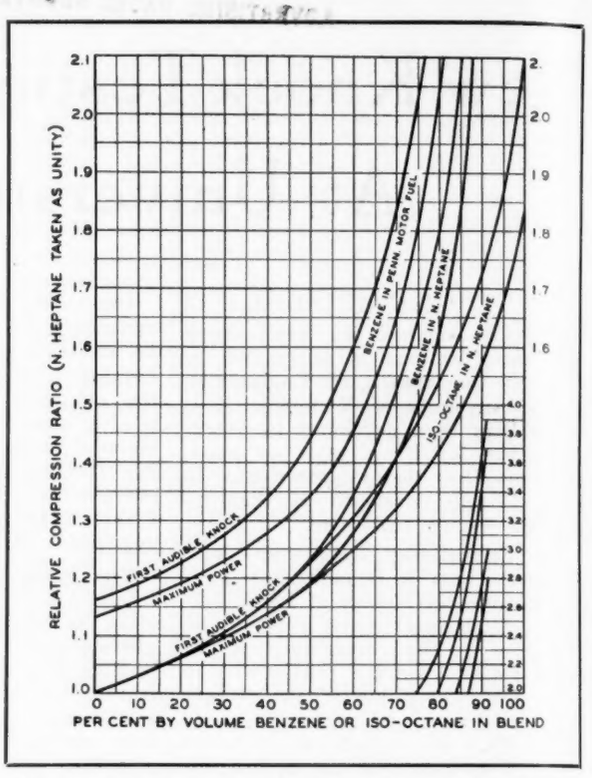

RELATIVE COMPRESSION RATIO (N. HEPTANE TAKEN AS UNITY)
PER CENT BY VOLUME BENZENE OR ISO-OCTANE IN BLEND
BENZENE IN PENN MOTOR FUEL
BENZENE IN N. HEPTANE
ISO-OCTANE IN N. HEPTANE
FIRST AUDIBLE KNOCK
MAXIMUM POWER
FIRST AUDIBLE KNOCK
MAXIMUM POWER

Fig. 3—Knocking characteristics for standard fuels

this arrangement produced more satisfactory results than the carburetor.

The next step was to replace this fuel pump with a Bosch fuel pump such as used on solid injection engines driven directly from the cam shaft. The fuel is fed to the pump from the weighing bottle and then sprayed through a regulation Bosch injection nozzle into the mixing chamber which has a volume slightly less than that of the piston displacement. Although designed to handle fuel oil, the only changes necessary in the pump and nozzle were to replace the springs to provide for a much lower injection pressure.

This fuel feeding equipment has been found most satisfactory. It handles satisfactorily fuels ranging from distillates to the extremely volatile natural gas gasolines. The air-fuel ratio is easily fixed at any desired value by the standard pump control which varies the amount of fuel injected at each stroke. Furthermore, when the air-fuel ratio is once set, it remains constant for all speeds, provided the volumetric efficiency of the engine is constant.

Variables due to different fuel jets and throttles have been entirely eliminated. All tests are run at full load, but it should be perfectly feasible to throttle the air before it enters the mixing chamber or vaporizer and cut down the fuel delivered by the pump proportionately if tests at part load were desired. The only inconvenience in using the fuel system as described is in starting the engine when the load must be quickly applied before the motor "runs away."

Fig. 2 presents this system diagrammatically.

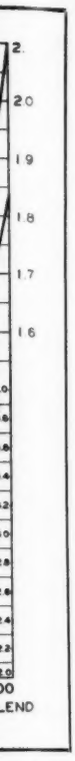
The fuel pump is mounted on a bracket and driven directly from the cam shaft. Fuel is supplied to it from two sources, and outside tank and a bottle on the fuel weighing scales. The outside tank is used when warming up the engine, while changing the fuels in the fuel bottle, or when using large quantities of one fuel.

The fuel bottle is used when determining the fuel consumption of the engine, or when only small quantities of a fuel are available, such as in knock rating. Both fuel lines are provided with shut-off cocks and drain cocks close to the pump so that one line may be drained while the engine is running from the other.

The pump is designed with a constant stroke, and the fuel metered by varying the point of cut off, the remaining fuel being injected back into the supply line, rather than through the nozzle. As this produced objectionable surging in the fuel line to the bottle, the surge chamber was added to absorb these pulses. There was still a tendency for vapor lock when using extremely volatile fuels, which was eliminated by installing the vent directly at the pump, as shown.

The intake "manifold," or vaporizer, is simply a cylindrical chamber 3½ inches in diameter and 13 inches long, into which the fuel is sprayed. The Bosch spray nozzle operates by the fuel pressure, forcing a small spring loaded valve off its seat and letting the fuel spray into the manifold. The spray angle is 15 degrees.

The engine is built with separate cooling jackets for the cylinder wall and the head. Cooling is accomplished by circulating distilled water at a constant rate through a closed system. The water entering the block jacket is at 120 F. and leaves the head at the exhaust valve at 175 F. Oil is circulated from a tank outside the crank case under pressure to the



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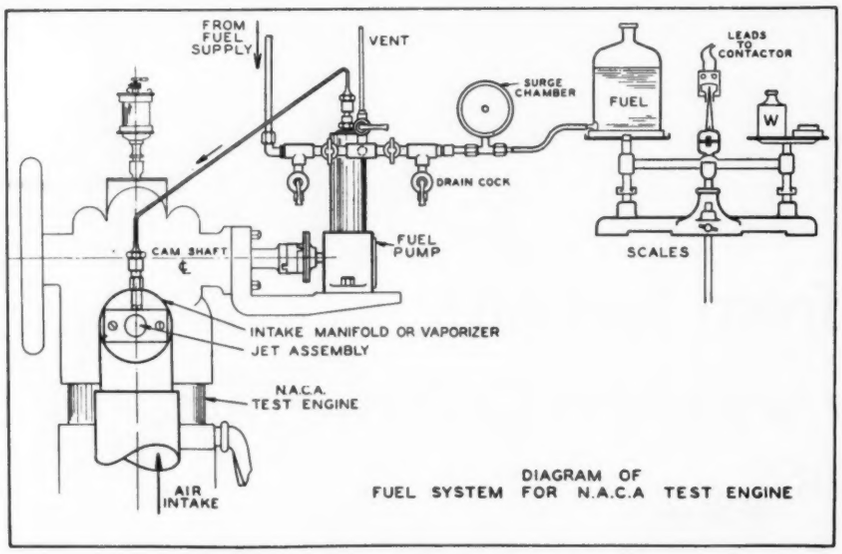

Fig. 2—Diagram of fuel system for N.A.A.C. test engine

bearings and leaves the engine at 140 F.

Much has been said in favor of evaporative cooling because of the uniformity of temperature automatically maintained in the cooling jacket by this means, but equally satisfactory results can be obtained by the proper circulation and control of cooling water. Adequate circulation appears to be equally desirable for either method of cooling.

In making knock-rating tests the air is heated to 170 F., the spark is constant at a 30 degree advance, and the air-fuel ratio is adjusted to produce maximum knock for each fuel tested. This ratio is usually between 12.5 and 13.3, but may approach 11 to 1 for high benzol blends. *In all tests the compression ratio is taken as a measure of the knocking qualities of the fuel.*

With the motor thoroughly warm and running at 900 revolutions per minute full load, the compression ratio is increased until knocking becomes distinct. The air-fuel ratio is then adjusted to give maximum knock. The compression ratio is then lowered until the knocking disappears. The compression ratio is again increased slowly until the point designated as first audible or incipient detonation is reached.

This point is perhaps best described as that at which the knock changes from a dull rumble to include occasional sharp knocks of higher frequency. At this point the beam on the dynamometer is balanced, the compression ratio noted, a fuel and air consumption test made, and all temperatures recorded.

Obviously, the determination of this point of first audible detonation is a matter of the operator's judgment and can be done satisfactorily only after considerable experience. Even then the human variable may be present to a rather high degree, but the point of first audible knock closely approximates the point at which knocking is first observed in the motor car, and for this reason is considered of prime importance.

The compression ratio giving maximum power under the same engine conditions is then determined as an independent check. As the compression ratio is slowly increased it is found that there is a narrow range over which the power remains fairly constant at a maximum value accompanied by severe knocking. A further increase in compression ratio reaches a point where occasional extremely severe knocks are observed, accompanied by a sharp drop in power.

This point comes in sharply and is recorded as the compression ratio for maximum power. At this point a fuel and air consumption test is made and all temperatures recorded. This maximum power point is almost entirely free from the human variable, and since it comes in sharply on most fuels, is usually the more reliable test of the two.

Stethoscopes, listening posts, thermocouples in the head, bouncing pins and indicators have all been tried as indicators of first audible detonation, but without success. The listening posts and other aids to the ear so magnity the noises of valves in the head of the motor as to negate their usefulness.

The bouncing pin when used at different compression ratios has been found to be affected by the rate of rise of pressure rather than by the knock and cannot be used as an indicator of knocking under different compression ratios, but only as a null-point instrument with all conditions exactly the same.

In our opinion, the next important step in the development of knock testing will be some satisfactory method of indicating the point of first audible detonation which will be practically independent of individual variations in the aural organ of the tester. A standard mechanical ear for determining audible detonation is highly desirable.

Usually the same benzol or iso-octane value is obtained by both the audible and the maximum power methods of determining the knock rating, but occasionally fuels are tested which show noticeably different knock ratings by these two methods of testing. However, it is always assumed that if the same knock rating is not obtained by the two methods of test, that there has been some experimental error and the tests are repeated. If the same ratings are again obtained, the results are considered as checked.

The combustion chamber is at a higher temperature when taking the maximum power readings, due to the more intense knocking occurring under these conditions. This condition is believed to be a major factor in giving these different results. This conclusion has been qualitatively verified by testing these fuels at higher engine temperatures. It is surprising, not that different results are obtained, but rather that the results obtained by the two methods check so closely in most cases.

In making routine tests the primary standards, such as blends of benzene and heptane, or blends of iso-octane and heptane, are not used for purposes of comparison. Blends of the standard Pennsylvania motor fuel and benzene which have been carefully calibrated in terms of the pure compounds are used as secondary standards.

The lines shown in Figure 3 representing the relative compression ratios at which the different blends knock are drawn through data points obtained in three different series of tests more than one month apart. In all cases the points fall within 1.5 per cent of the line which is drawn as the best curve through the data points, and in only three cases do the points fall more than 1 per cent off the line. The routine knock rating tests are accurate within the same limits.

The compression ratio at which normal heptane shows first audible detonation under the conditions described is usually about 3.53 and that at which maximum power is developed is about 4.13. Relative to normal heptane, the new ethyl gasoline standard fuel as received from the Ethyl Gasoline Corporation laboratories at Yonkers, New York, shipped on October 1, 1929, and identified as "motor gasoline anti-knock standard No. 11," shows a relative compression ratio for first audible knock of 1.42 and for maximum power of 1.33. This corresponds to an iso-octane value of 71 to 72 and a benzene value based on heptane of about 65 with a conventional benzol value based on Pennsylvania motor fuel of 48 to 49.

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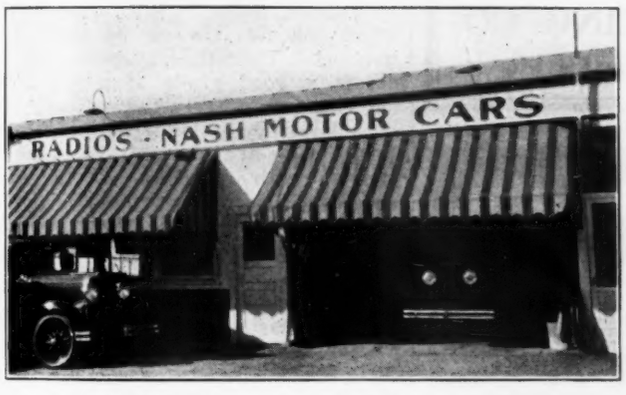
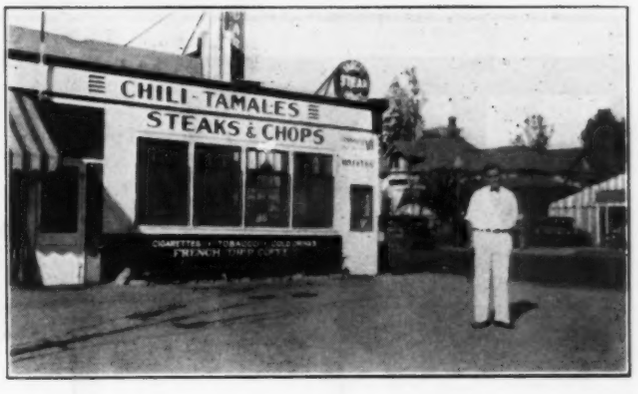
That's the Formula of Success For a One-Stop Station of A Californian

By R. H. Thomas*





Gasoline station and various departments of the one-stop station operated by R. F. Price, at Ontario, Cal.

"WHEN you decided to embark upon the one-stop station business, just what made you locate where you are—with service stations on practically every corner about your place?"

This was asked R. F. Price of Ontario, Calif., who, less than six months ago, purchased 96 by 188 feet of valuable ground with a service station on it. The station had enjoyed but a limited gallonage until he took hold of it, but he developed the property into one of the most remunerative corners in southern California—investment considered.

"As far as location is concerned, I knew this site, with proper ingress and egress, to be admirably situated for local business and ideal for serving tourist trade," said Mr. Price. "This is right on the principal artery leading into Los Angeles, and carries the most traffic through this city.

"Though there are many other stations on this highway, investigation convinced me that the proportion of the tourist's trade I might get would depend, primarily, upon the goods handled and the service given.

"However, from the standpoint of local business, other things had to be taken into consideration. Before I decided to invest $40,000 in this site, located just kitty-corner from my largest and strongest competitor, two blocks from the center of the business district, and right in the heart of the automotive industry, I checked business possibilities and estimated costs down to close figures.

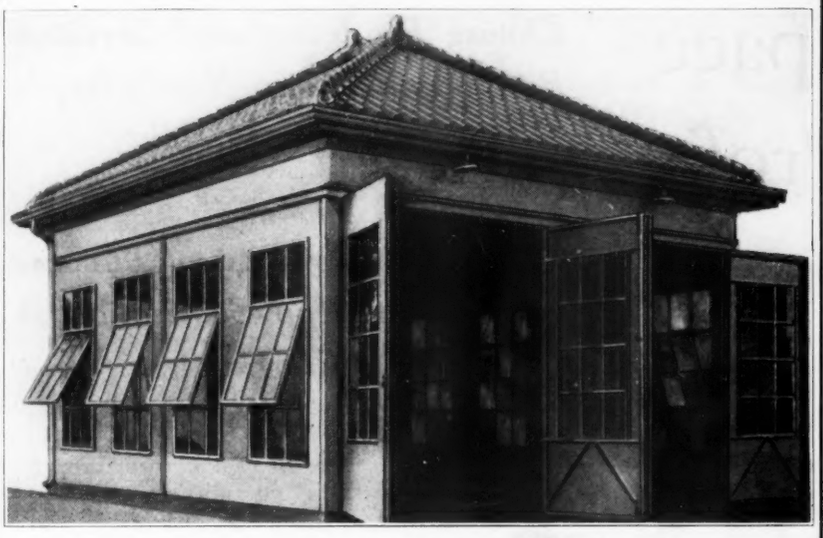
"A diagram of the ground was laid out on paper, after which I located, conveniently on the site, the ten separate departments or units which were to make up the whole station.

"I decided that my success would be measured by my ability to make every square foot of the site pay dividends upon my investment—and that the only way to do that would be to utilize all the space."

"That sounds very interesting, Mr. Price," I remarked. "I notice you seem to feature two brands of one company's gasoline, although you sell two other brands of gasoline refined by two separate companies. In other words, you are selling gasoline for three different companies, and you sell many brands of lubricating oil. Why do you split up your business in this manner?"

"There is no secret about that, either," answered Mr. Price. "Figures don't lie. What I think, or what I know, is not as important to mo-

*Author of "Merchandising of Petroleum Products."



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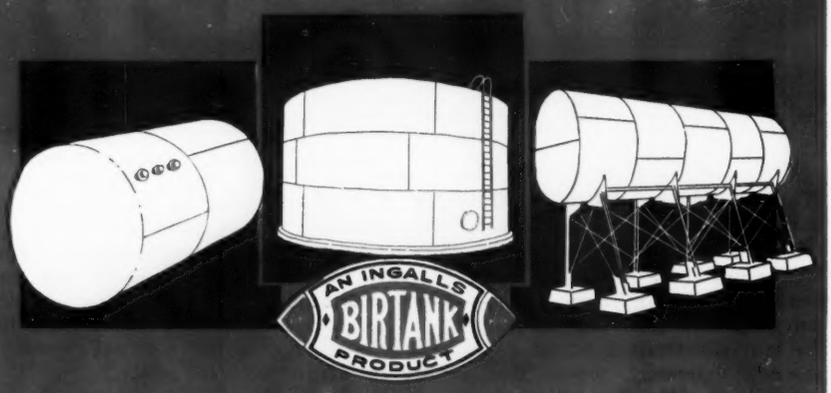

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torists as what they know or think they know. Cold facts, in the form of figures obtained from one of the state departments indicated to me the motorist's choice of motor fuel in California. I linked up with the company marketing the greatest number of gallons of gasoline. This company advertises nationally its regular grade and the same grade Ethylized. Tourists buy these nationally advertised products. To get as much of that tourist trade as possible, I eliminated my biggest competitor by taking on his popular products.

"However, brands most popular with the tourist trade from the east and middle west sections of the United States are not, necessarily, the most popular with residents of California. It must also be borne in mind that, due to advertising, hundreds of motorists believe there are other knock-reducing fuels on the market as satisfactory as Ethylized gasoline. To take care of this trade demanding anti-knock gasoline but who will not pay a premium of three cents a gallon for the Ethylized product, I buy for resale the gasoline which careful investigation has proven will satisfy the greatest number of these customers.

"Finally, there is the local aspect, which should always be carefully weighed. The other gasoline I handle is a good grade of motor fuel, but not extensively advertised. It is supplied by a local jobber who is very well known and exceedingly popular with residents of this city and contiguous territory. He is a live wire and makes known to his friends where his gasoline and lubricants can be purchased.

"It is surprising to know how many buy his gasoline and lubricants from me for no other reason than that the fuel is satisfactory and that they wish to help him market as much as possible of it. The proof of this is in the repeat business.

"My local sales of his gasoline will run four to one as compared with the sale of the product of the ranking company in total state business."

"Why do you find it necessary to handle so many brands of motor oil, Mr. Price?" was the next query. "Don't you lose as a result of the quantity discounts that would apply if you bought all the grades required from one company?"

"Upon first blush you might think so," said Mr. Price, "But time is money to me. Eighty per cent of the motorists out here demand eastern oil. The brands of eastern oil I sell are all nationally advertised. Thousands of motorists know or think they know—which amounts to the same thing—what oil is best suited to meet the requirements of their cars. The other 20 per cent choose western oils with the same degree of personal satisfaction.

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Loreco Kerosene
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Loreco Furnace Oils
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Loreco Industrial Fuel Oils
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Loreco Absorbing Oils
Loreco Asphalt

LOUISIANA OIL REFINING CORPORATION

PRODUCERS REFINERS MARKETERS

SHREVEPORT, LOUISIANA

its is the job cut out for the makers or marketing companies through avenues they should know most about. I don't think I should spend my time or pay for another's time in an attempt to prove to my customers that they do not know what they want—any more than a man should try to prove to a lady wanting to buy a white dress that a black one would be more serviceable or becoming and that she should buy what he might select for her. I don't want to use my place of business for long drawn out arguments. We are not in business to force upon motorists what they don't wish to buy. We are here to supply just what they want, as quickly, and more courteously if possible, than the same service is rendered elsewhere.

"Now about the discounts you spoke of. Quick turn-over beats a long discount all hollow. Quick turn-over actually yields an aggregate profit at the end of the year. Quantity discounts on slow moving merchandise are a salesman's illusion. If you fall for it, you will have plenty of frozen assets to worry about—and a beaten path may lead past your door, instead of to it.

"Eastern oil costs 45 cents per gallon more than western oil and yields a gross profit of approximately 63 cents. Western oil costs 45 cents less than eastern oil, per gallon, and yields a gross profit of approximately 68 cents. However, if I were to buy 20 barrels of western oil and the same quantity of eastern oil, my money would be tied up for perhaps less than two months, in the eastern product and all of eight months in the western. I am not saying which oil I think is the best. I'm telling you what the buyers think about it—and they are the people who make or break every business enterprise.

"When I consider the interest value of my money, the storage space utilized for slow moving merchandise, etc., I'm more determined than ever to carry just enough to supply my trade for reasonable periods, and to let others chase the rainbow for long discounts. My experience impels me to keep my money working—and in being satisfied with a little less profit on each sale and to constantly strive to increase the number of sales by giving folks what they want rather than by arguing about what I think they ought to buy."

"How does the tire repair unit work out?" I asked, as I glanced over in that direction.

"Just fine," came the quick response. "You see, everything is wide open on this lot 24 hours each day. During the month we have hundreds of folks drive in here at night, after all the other stations are closed, and we are equipped to give them the kind of service they are looking for. The next time they come along, day or night, they don't forget us.

"Good tire service, quickly rendered by a clean, courteous, affable individual, who injects his own personality into the work he is doing, makes a lasting impression upon the man paying for the job. Doing a good job is only half of the business battle these days. Personality, pleasing conversation, and a kindly disposition must be injected in proper proportions with good work. No one wants to patronize the best workman on earth if he is discourteous, grouchy and acts as though he were doing you a favor to take your money."

Ten Units for One Stop

THE ten departments of the one-stop station as laid out by R. F. Price, in Ontario, Calif., are as follows, the mechanical and painting units not installed as yet:

1—Gasoline station carrying four brands of gasoline and five brands of eastern and two of western motor oils, with rest rooms.

2—Tire repair unit.

3—Unit for complete lubrication work.

4—Car washing unit.

5—Mechanical unit.

6—Paint job unit.

7—Platform scale for weighing trucks.

8—Automobile, radio and tire sales room.

9—Restaurant.

10—Space for used cars, out of view of station customers.

"Suppose I should drive into your station—a complete stranger—and asked you to drain and replenish the crank case with a good grade of motor oil, without mentioning brand or base, eastern or western, what would I get?" is the next question I shot at Mr. Price.

"I would tell you, truthfully, that 80 per cent of our customers used eastern oil at 35 cents per quart and that 20 per cent used western oil at 25 cents per quart, with results which were, apparently, satisfactory to both classes of trade. I would say that my experience had convinced me that western oil did not last as long as eastern oil; but, if changed every 500 to 700 miles it would give very satisfactory service. I'd let you make the decision for yourself, and you would get exactly what you ordered, too."

"Since we have no mud out here in southern California, I'm a little curious to know how the wash rack and polishing unit is panning out. Do most of these motorists wash and polish their own cars in this country or do they keep you busy in that department?" I inquired.

"Now you're standing on my corn," came the laconic reply. "I'm investigating that department right now. I know it is paying its own way; but the definition of business, I believe, is any gainful occupation of which profit is the goal and in which there is risk of loss. To be on the border line can be likened to standing on a precipice. It's not a comfortable situation to be in. It is my duty to make this department yield a reasonable profit above interest on invested capital and overhead. This I am determined to do."

"I don't see the mechanical or paint job unit you said was laid out on the original blue print, when you were considering the proposition," was the next lead I threw out.

"No, you don't, Thomas," came the ready reply. "But, you see the vacant space left for those units to be added," said Mr. Price, as he pointed to a piece of ground reserved for that purpose. "I'm a crank on men. I can lease land, buy lumber, secure proper equipment, and get it installed; but to find just the right man for a given responsibility is another matter, and too often overlooked. I'm not making that mistake. My leads are out for just the right man to head each of these departments—conscientious men who will take the same interest in the work that I will take. I'm about convinced that I have located both of these men. I expect to add the two extra units very soon, now."

I guess I was visably impressed by the sincere, straight-forward reply Mr. Price gave to every question.

"Maybe you'd like to know how I happened to install that big scale on this service station lot?" he volunteered.

I assured him it would be most interesting to hear the facts.

"Well, there are hundreds of loads hauled through here on this boulevard every week, aside from the stuff handled locally," he continued. The majority of these loads must be officially weighed somewhere and a receipt covering the weight of the load tendered to the buyer.

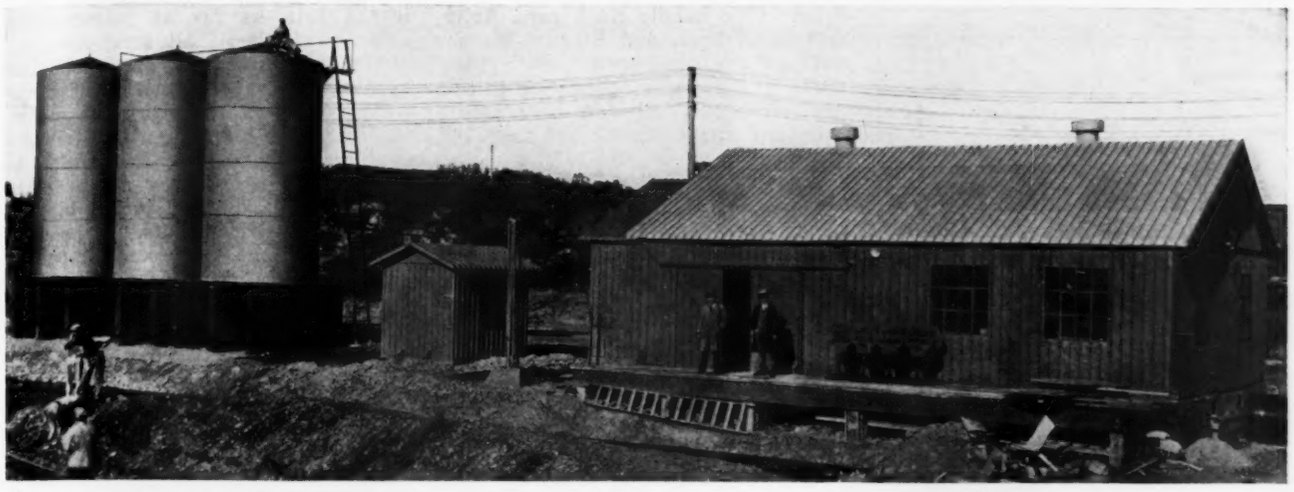
"We have cotton coming through here, in season, from the Imperial Valley with Los Angeles or San Pedro harbor as the destination. Then there is hay, grapes, feed, etc., etc. The haulers like to weigh their loads where it will not inconvenience them. Whether they are going east or west, north or south, it is not only convenient, but most convenient to weigh right here. You have noticed that cafe, haven't you?"

"Yes, I have," I answered.

"Well, can you imagine anything more satisfying to a hungry, tired, long-distance hauler, after riding all forenoon or all afternoon on a big heavy, perhaps rough riding and comparatively slow moving truck, than

ADVERTISING PAGES REMOVED

A SHELL BULK STATION



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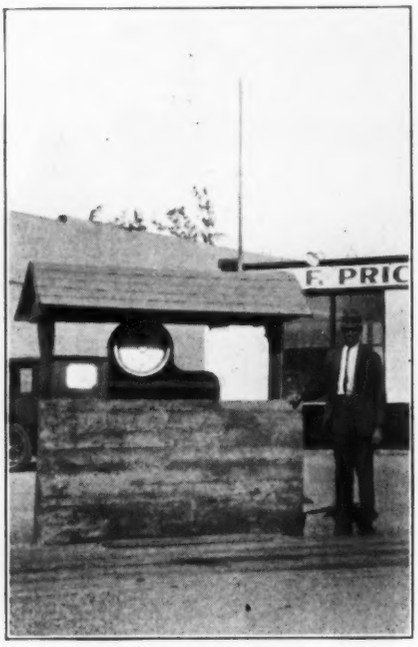
BUTLER MANUFACTURING COMPANY

1241 Eastern Avenue
Kansas City, Missouri

941 Sixth Avenue, S. E.
Minneapolis, Minnesota

to drive up to our pumps, have the truck filled with gasoline, oil, and the water in the radiator replenished; a tire replaced if necessary; the water checked in the battery; grease added in the transmission or differential, or a complete greasing job completed if necessary; his load weighed and his receipt made out.



Platform scale for weighing heavy truck loads installed by Mr. Price at his one-stop station in Ontario, Cal., as a service to the general trucking trade

All this while he is enjoying a fine steak, cooked just right and coffee that would satisfy the King of England?"

"Say, when that man has finished his meal and asked 'How much' and gets his answer and knows that the price was reasonable, his face fairly beams with satisfaction. He pulls out his cigarette, pipe or cigar, and proceeds to light up. He's happy and harmonious. When he steps out and gets his weight slip, in fact, finds that all his requirements have been scrupulously satisfied, he simply never forgets the place. He is happy when he leaves and he comes back in that same frame of mind. That isn't all —he tells the world. If a trucker comes in late at night and wishes to sleep in his truck, as many do, we call him at any hour he may specify."

"Do people ever stop to eat who have no thought of patronizing the service station?" was my next question.

"Sure! Lots of them," replied Mr. Price; "But, harmony being the strength of all worth while institutions, it's ours, too. When a tourist goes into the cafe to eat, his requirements are most tactfully and pleasantly solicited by the waiter while he is enjoying that good meal. The cafe boosts for all the other departments. The other departments all boost for the cafe. In other words, it's one for all and all for one."

"I believe yours is the first service station I have ever known where selling automobiles is carried on," I asked. "Is that, too, meeting with your expectations?"

"Yes, it is," promptly answered Mr. Price. "We handle Nash cars, Kelly-Springfield tires, and Stewart-Warner radios. Two salesmen devote their entire time to sales solicitation in this territory. Not only do they secure some fine car business, but they sell tires and radios, also. These men alternate at the sales room where one new car is always on the floor, and I have one for demonstration purposes. This department pays well as a separate unit but that is not all.

"These salesmen, as they go about in the solicitation of business, always mention the super service rendered at the station. This greatly accentuates to the trade the wisdom of patronizing our one-stop, completely organized service. Once we get them on the lot, the battle is won, because every man here is on his toes and eager to make good on his advertised reputation.

"It is seldom, nowadays, that the prospective new car owner does not have an old one to trade in. We make no fabulous offer for the old car in trying to land a deal. We are guided, entirely, by its resale value. Our second hand cars are on the back end of the lot where they cannot be observed by disinterested parties, and in no way detract from the appearance of the super service units which we endeavor to make as attractive as possible with proper lighting effect and shrubbery, and by keeping everything neat and clean."

"Just one more question, Mr. Price. You say the men here on the lot are taught to give folks what they want without argument. Now where is any salesmanship displayed?"

Mr. Price smiled. "Are you not the man who suggested that winning an argument might mean losing the sale?" was his rebuttal.

I admitted the truth.

"All right," came the confident reply, "It's all salesmanship. We don't argue, we don't bore, we don't make people feel ill at ease; but, while we are filling orders for what they want we observe what they need and we endeavor to suggest in the most kindly, tactful and diplomatic manner at our disposal that they probably want such and such a thing, and suggest why we think they want it.

"Many folks could not be sold this very article; but you can't stop them from buying of their own accord what they want. When you help them to a realization of what they want, they'll do their own deciding, but it will be in your favor, so there's nothing to worry about.

"Now, if you can imagine a better place than at the air-stand or on the scale, to suggest the possible need of a spare, a boot, or the possible consequences of a blow-out in the middle of the desert, you have something on me. Again, while putting oil in the crank case, if one does not observe a worn out fan belt and cannot picture an overheated engine trying to negotiate Cajon Pass without a fan belt—so far as salesmanship is concerned he is all scrap-iron.

"The opportunities are multiplied by the number of units. And while we make no effort to pry the motorist loose from his seat, we do tell him of the service we are in position to render, and if he does not seem in too big a hurry we invite him to inspect the various units. If he does, he will experience some impelling buying motives for they will be thoroughly aroused. If he won't get out to look around, we don't worry. He'll be back."

"This whole story has been food for thought for me, Mr. Price," I remarked, "and I want to know something about you personally." Instantly his expression changed, and all I could get out of him was "I do not wish to run," as he smiled, wheeled on his heels and waved me aside. A few paces away he turned his head and shouted, "I'll see you at Rotary Thursday noon."

R. F. Price

Further investigation revealed that Mr. Price is not only a Rotarian but that he frequently brings his competitors to Rotary with him and does his best to assist them in any problems that they bring to him. He is now, and has been for some time, a member of the city council, a director of the Chamber of Commerce; and the citizens of the community all testify to the fact that he makes himself generally useful in civic affairs and fraternal organizations.

Does Your Station Say DRIVE IN

NIGHT TIME is "Money Time" for the station that lights up for a bigger business. Make your drives and pump areas attractive and safe for the motorist and speed up the service of the working crew.

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CLEAN attractive tank trucks spread evidence of your company's prestige wherever they travel. And by washing trucks regularly the Oakite way, you can keep them looking their best . . . always vivid advertisements for your concern. Oakite cleaning quickly removes all signs of road dirt and traffic grime; leaves metal and wooden surfaces bright and film-free. Write for booklet giving facts and formulas for washing trucks the economical, speedy Oakite way. No obligation.

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ON THE LAZY BENCH

National Petroleum News

"My husband has no bad habits whatsoever," boasted a wife. "He never drinks, and he spends all his evenings at home. Why he doesn't even belong to a club."

"Does he smoke?" inquired a friend.

"Only in moderation. He likes a cigar after he has had a good dinner, but I don't suppose he smokes two cigars a month."

—Barnsdall

* * *

The business men were talking over their employes.

"Well, old Johnson has grown gray haired in my service."

"Pooh. I've got a girl with me who has grown yellow, brown and red-haired in my service."

—Magnolia Oil News

* * *

Probably Wore a Mustache

Busy Boss to Stenog.—"Take the phone message—I'll get it from you later."

Stenog. (demurely)—"No, thanks! Your little girl wants to kiss you over the wire."

—Isotopics

* * *

Putting the Parson in a Jam

The guards grimly went about their task of affixing the electrodes to the body of the doomed man in the chair. The kindly chaplain bent over him.

"Any request, my poor mortal?" he inquired.

"Yes, parson," the wretch replied, "It'll comfort me a lot if you'll just hold my hands."

—Mid-Continent Petroleum Courier

* * *

The man was playing alone. Two boys kept following him around the course. At the ninth hole, he turned to the boys and said, "You'll never learn to play watching me."

"We're not watching you," said one of the boys. "We're going fishing as soon as you dig up some more worms."

—Barnsdall

* * *

The sedan was parked at the side of the road and as the man drew near he could hear noises of a struggle within. He could hear a rustle, probably of silk, and the muffled panting of a man. The body of the car swayed slightly to and fro. He heard a curse and again the muffled panting. He crept softly around to the side and looked into the window and saw—

A man trying to fold a road map the same as it had been.

—The Texaco Mission

"Five gallons, please."

"Okay. How's your oil?"

"Just gas, please."

"How about a bottle of Shinyola—great for lacquer; your bus is all covered with traffic film?"

"Nope, just the gas."

"Your left rear tire's pretty well shot. Better let me put on a new one; we're selling Puncherproofs today for—"

"No, the gas will be all."

"How long since you had a grease job? Everything looks kinda dry—hear that body squeak?"

"Haven't time today—just the gas this time."

"How about one of our electric cigar lighters—clamp right on your dash and when you want a—"

"Hell, NO! JUST THE GAS!"

And as the indignant motorist drove away with his five gallons of gas, the filling station proprietor remarked to a bystander:

"That there was my barber."

—The Oil Can

* * *

Have You One in Your Office?

"Miss Curley," said the office manager apologetically to his stenographer one morning, "I would suggest that you do not write letters to your young man during office hours. Smith & Jones report that we sent them a shipment of love and kisses instead of the tar and axle grease they ordered."

—Isotopics

* * *

Brevity is the soul of modern journalism. A budding journalist was told never to use two words where one would do. He carried out this advice in his report of a fatal accident in the following manner:

"John Jones struck a match to see if there was any gasoline in his tank. There was. Age 65."

—Barnsdall

* * *

"The jig is up," said the doctor as the patient with St. Vitus dance died.

—Barnsdall

* * *

Service Station Attendant: "Shall I check your oil?"

Patron: "No, I'll take it with me."

—Union Oil Bulletin

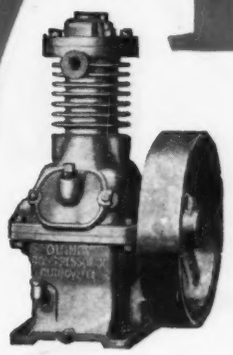
* * *

Wifie: "John, dear, I am to be in an amateur theatrical. What would folks say if I were to wear tights?"

Indifferent Half: "They would probably say that I married you for your money."

—Barnsdall

V-Belts

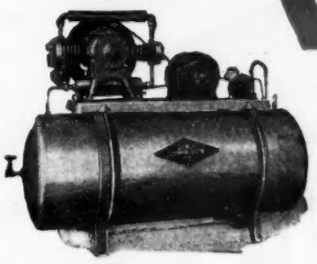


Model A

An air cooled compressor made in 8 sizes, with displacements ranging from 1 to 27 cu. ft. per minute and requiring motors of from ¼ H. P. to 5 H. P. "V" type pulley furnished as special equipment.

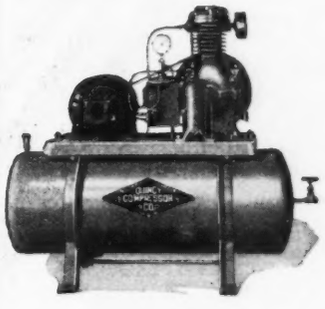
Model G-18

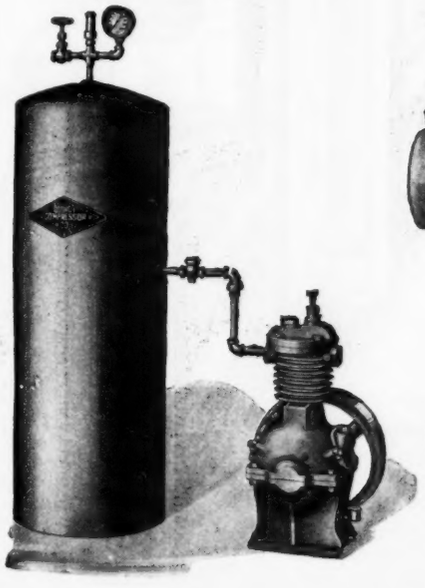
Two-Stage Automatic Unit. ¾ H.P. Motor. Single V-Belt. Tank, 20 x 48—65 Gallon. 175-lb. cut-off pressure. 3¾ cu. ft. displacement. 1 H. P. for 4½ cu. ft. or 1½ H. P. for 6 cu. ft. 25 foot hose with chuck.



Model F-1

Single-Stage Automatic Unit. ½ H. P. Motor. Single V-Belt. Tank, 14 x 36—24 Gallon. 150-lb. cut-off pressure. 2.8 cu. ft. displacement. ¼ H.P. Motor for 4.2 cu. ft. displacement. 25 foot hose with chuck.





Model B

Tank Outfit, complete with 25 ft. hose and chuck. Equipment includes any of five model A compressors piped up to proper size tank, with check valve, pressure gauge, safety valve, drain cock, shut off valve; hand unloader in compressor head.

are saving users of Quincy Compressors 20% to 30% on power—a continuous, every-day saving that comes right out of the overhead.

And get this: Quincys were the very first air compressors to have V-Belts.

V-Belts save power because they are run loose but hold anyway. There is no undue tension on bearings, no idler to eat up power, no slippage, no jumping off the pulleys.

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Please send complete story about Quincy Compressors.

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12 YEARS

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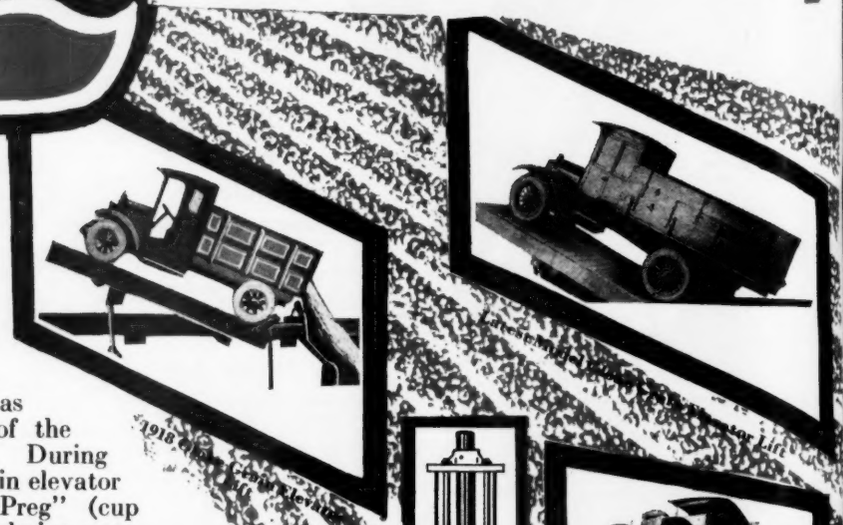
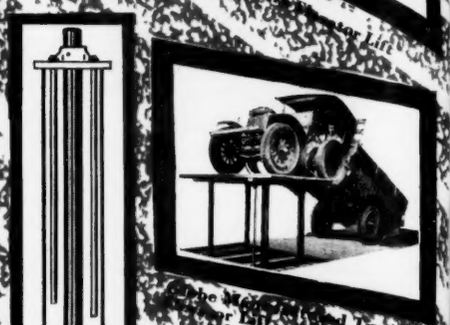
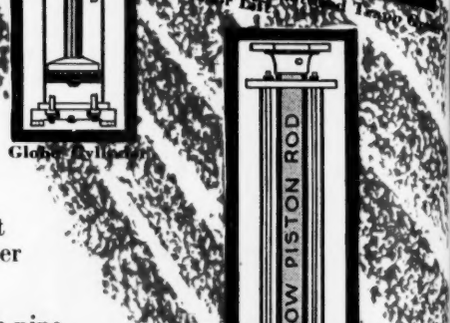
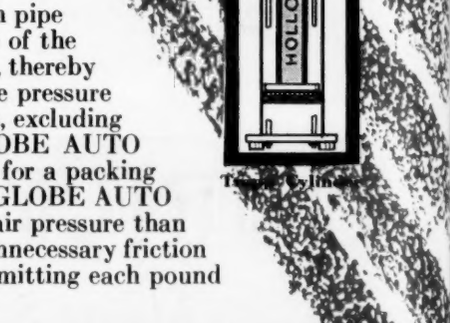
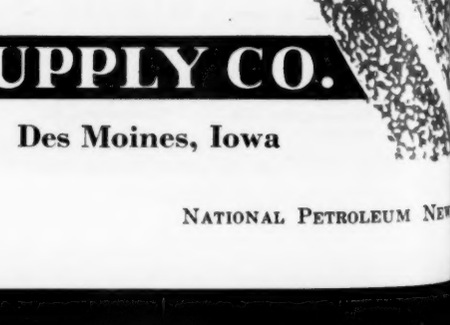










"HI-PREG" Applied to the Grain Elevator Field

The largest field in which the GLOBE "Hi-Preg" lifting unit has been applied in the past is that of the grain elevator truck and wagon lift. During the past twelve years, 90% of all grain elevator lifts have operated on the "Hi-Preg" (cup leather) principle. Such an overwhelming acceptance can mean but one thing—*this basic principle offers complete and permanent satisfaction.* Hundreds of letters from purchasers of "GLOBE" and "TRAPP" grain elevator lifts state that this equipment has been used for as long as ten years, without one cent being spent for repairs, and without even a single cup leather replacement! The average life of a cup leather in our lifts has been greater than five years. It is the "only wearing" part of a GLOBE AUTO HOIST—hence our slogan "Years of Service Without Service".

Just What the Globe "Hi-Preg" Lifting Unit Is.

The GLOBE "Hi-Preg" idea is as common as the old bicycle pump. It is identical in principle with all deep well plunger type pumps, capable of pumping water from a depth of 600 feet. The latest hydraulic jacks, with capacities of 150,000 pounds, use the cup leather principle.

In GLOBE AUTO HOIST the oil is driven by air up through a ¾ inch pipe in the storage tank, against the bottom of the piston forcing the lip of the Globe cup leather tightly against the polished inner wall of the cylinder, thereby forming a perfect seal and raising the piston assembly. The greater the pressure against the lip of the cup leather, the more positive the seal becomes, excluding every chance for oil escape. There is never any waste of power in GLOBE AUTO HOIST operation, for the "Hi-Preg" principle eliminates the necessity for a packing gland at the top of the cylinder. This principle makes it possible for GLOBE AUTO HOIST to raise any car with from fifteen to one hundred pounds less air pressure than any other air-operated hydraulic lift of the same capacity, because all unnecessary friction is eliminated and all pressure is concentrated at the piston base, permitting each pound of pressure to do its full share of lifting.

GLOBE MACHINERY & SUPPLY CO.

205 West Court Avenue **Des Moines, Iowa**

LEADERSHIP

Lifting Unit

GLOBE'S RIGHT TO MANUFACTURE A HYDRAULIC HOIST

In view of certain assertions that have been made and published regarding the rights of various firms to manufacture auto elevating equipment, it has been thought advisable to offer to the trade, a frank statement of our position in this connection.

THE GLOBE AUTO HOIST DOES NOT INFRINGE ON ANY VALID PATENT

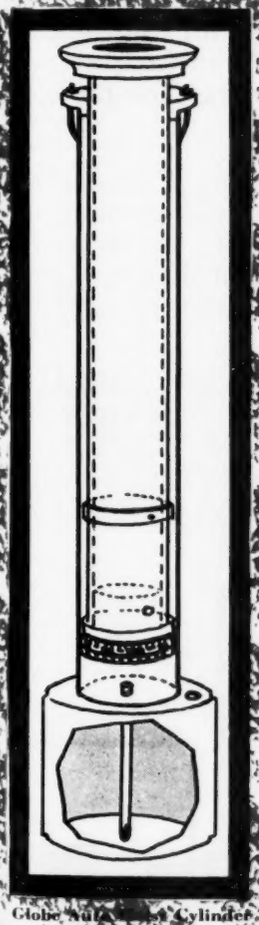
Other manufacturers undoubtedly have licensed rights to their designs and we have licensed rights to our design. The operating principle of GLOBE AUTO HOIST is one that we have used in manufacturing elevating equipment since 1918.

WE GUARANTEE ALL PAST AND FUTURE DISTRIBUTORS AND PURCHASERS OF GLOBE AND TRAPP GRAIN ELEVATOR LIFTS AND GLOBE AUTO HOISTS AGAINST ANY AND ALL LOSSES FROM PATENT INFRINGEMENT SUITS.

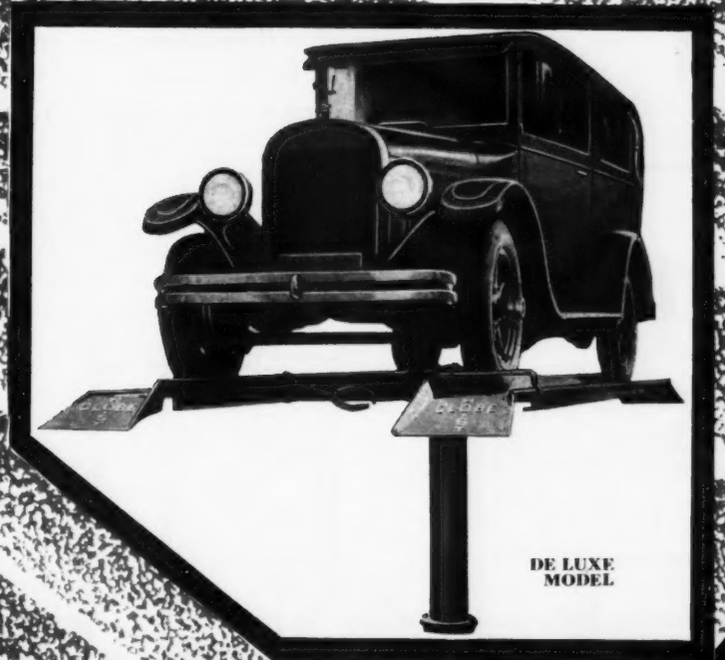
Operating Principle of Globe Auto Hoist Used by Globe Since 1918 Under U.S. and Canadian Patents. Patents Applied for in Principal Foreign Countries.

FROM a mechanical standpoint, the unprecedented success of the GLOBE AUTO HOIST is due almost entirely to the GLOBE "Hi-Preg" idea. This feature has remained unchanged in principle and construction for twelve years. During this time it has been applied to many different uses—short lift freight elevators, grain elevator lifts and dumps, industrial lifting units, and to the automotive field in the GLOBE AUTO HOIST. The illustrations indicate clearly that the original "Hi-Preg" principle has remained the same since 1918.

Thus, all past and future purchasers of GLOBE AUTO HOISTS have two very important guarantees of satisfaction: *First*, the satisfactory use of this principle for twelve years in thousands of units scattered throughout the world. *Second*, GLOBE AUTO HOIST is manufactured and sold by an organization that is well-rated financially and is ready and able at all times to substantiate its guarantee of absolute satisfaction to every GLOBE AUTO HOIST purchaser. These two assurances regarding both the product and the manufacturer enable you to purchase GLOBE AUTO HOIST with absolute confidence.



Globe Auto Hoist Cylinder



DE LUXE MODEL

A higher type of GREASING SERVICE

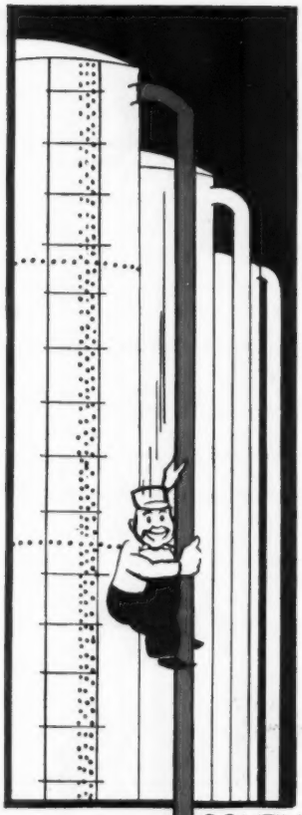
1928 Globe Supply

GLOBE *Auto* HOIST

SAFER — QUICKER — BETTER

From the Oil Well to the Jobber

This is Chapter Eleven of the Story of My Life and Travels.



I told you in my last chapter of being treated in the continuous treaters after having passed thru the cracking units. Now I'm on my way back to the battery of shell stills where I am to be again distilled by a process known as "re-running."

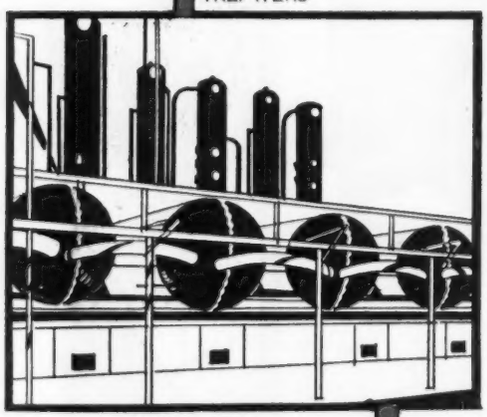
In I go and start getting hot. The intense heat soon starts to vaporize me and my vapors travel upwards into the refractionation towers. The stills and towers are the same type as described in Chapter Four. (N.P.N. 10/9/29)

After being refractionated my vapors travel down out of the towers into the condensing coils explained in Chapter Five (N.P.N. 10/23/29). From here on my travels are identically the same as the straight-run products which passed before me.

Into the agitating treaters I travel where I am treated for color stability, corrosion and odor. This treatment I explained fully in Chapter Seven. (N.P.N. 11/20/29) When I leave here I will be a marketable product of the best "anti-knock" quality ready for the jobber.

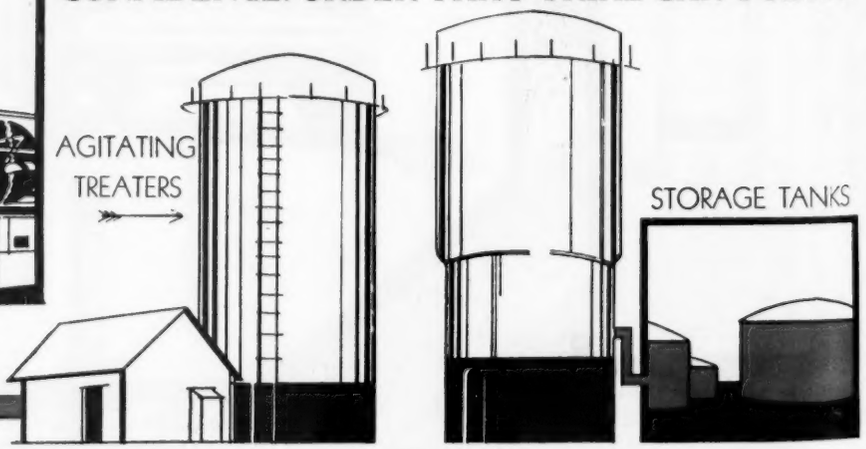
Thru at last! I've traveled the complete refining system. I'm here in the storage tanks alongside of my brothers, the "straight-run" gasoline, kerosene, distillate and other petroleum products. Now we are all ready to serve the trade, just waiting for the jobber's orders. In the next Chapter I am going to tell you how these orders are promptly and carefully filled. Watch for it, two weeks from today.

CONTINUOUS TREATERS



SHELL STILL

OUR COMPLETE FACILITIES ASSURE ABSOLUTE CERTAINTY TO YOU, BOTH IN SERVICE AND UNIFORM QUALITY AT ALL TIMES. YOU CAN ALWAYS BUY FROM EL DORADO WITH COMPLETE CONFIDENCE. ORDER THAT TRIAL CAR TODAY.



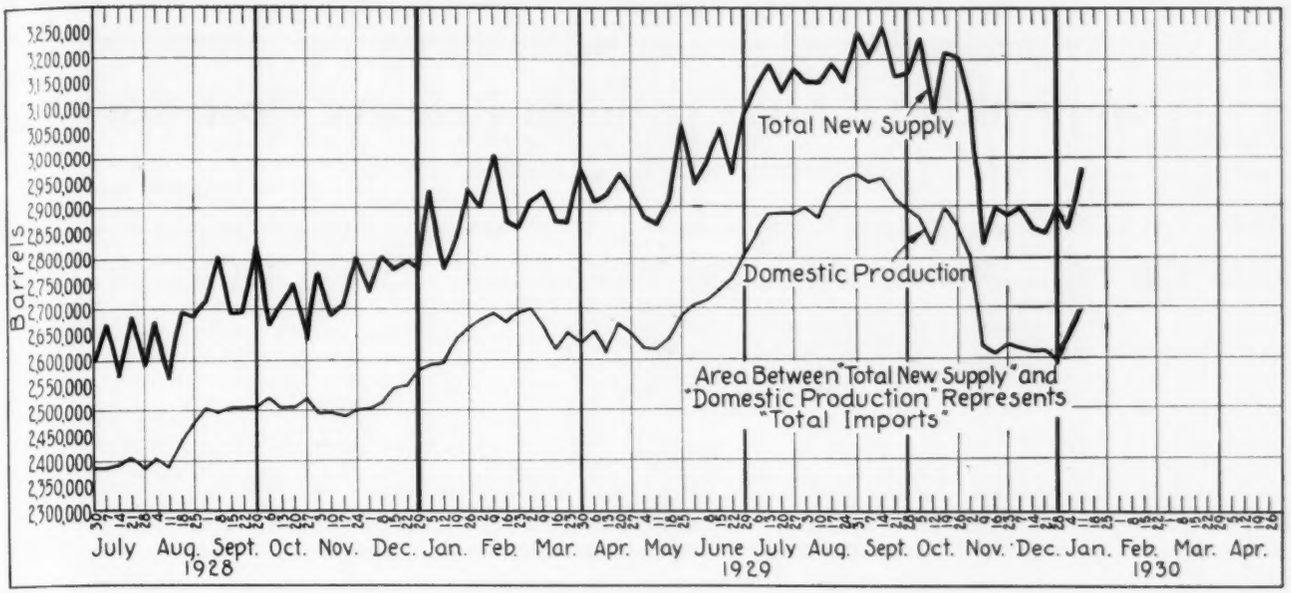
THE · EL · DORADO · REFINING · CO.

ESTABLISHED 1916

· EL · DORADO, · KANSAS ·

JUST CALL L.D. 11

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Jan. 11	Jan. 4
Production east of Rockies	1,989,550	1,951,800
Increase		37,750
Total production in U. S.	2,689,250	2,652,300
Increase		36,950
Crude oil imports	266,860	205,430
Increase		61,430
Total crude supply	2,956,110	2,857,730
Increase		98,380

OKLAHOMA

	Jan. 11	Jan. 4
Allen Dome	26,050	21,300
Asher	3,100	3,450
Blackwell	3,500	3,550
Bowlegs	24,850	22,200
Braman	3,600	3,600
Bristow-Slick	18,500	18,050
Burbank	17,000	17,500
Carr City	7,500	7,800
Cromwell	7,650	7,650
Cushing	15,150	15,250
Davenport	1,250	1,300
Duncan District	8,350	8,400
Earlsboro	33,550	31,250
East Earlsboro	69,650	53,100
East Little River	19,700	*19,500
East Seminole	4,850	3,800
Fox	1,300	1,300
Garber	4,700	4,700
Graham	3,800	3,800
Healdton	12,350	12,350
Hewitt	7,600	7,600
Hubbard	1,650	1,700
Little River	44,150	39,450
Logan County	13,900	13,900
Maud	7,950	7,900
Mission	14,850	14,400
North Okmulgee	11,400	11,450
Oklahoma City	94,650	99,300
Osage (outside Burbank)	26,700	26,700
Papoose	3,000	3,100
Pearson	900	850
St. Louis	48,450	47,650
Sasakwa	12,850	11,100
Scholem-Alechem	14,150	14,200
Searight	8,150	7,850
Seminole	24,950	22,400
South Okmulgee	6,500	6,500
Thomas	550	550
Tonkawa	8,700	8,750
Wewoka	4,150	4,300
Yale-Jennings	8,550	8,500
Others	57,400	57,900
Total, Oklahoma	707,550	*675,900
Increase		31,650

KANSAS

Augusta-Fox Bush	3,058	3,050
Churchill	4,750	5,100
Eldorado-Towanda	13,500	13,550
Florence-Covert	900	850
Greenwood County	21,300	21,600
Oxford	3,100	3,300
Peabody-Elbing	3,100	3,150
Rainbow Bend	1,150	1,150
Russell	3,600	3,350
Sedgwick County	23,550	24,150
Others	34,500	35,000
Total, Kansas	112,500	114,250
Decrease		1,750

NORTH LOUISIANA

Bellevue	650	600
Caddo, light	10,200	9,900
Caddo, heavy	2,850	2,900
Cotton Valley	2,250	2,300
De Soto and Red River	3,000	3,000
Elm Grove	550	550
Haynesville	4,650	4,650
Homer	3,850	3,850
Pleasant Hill	900	800
Urania	5,150	5,200
Zwolle	3,650	3,750
Others	1,150	800
Total, North Louisiana	38,850	38,300
Increase		550

ARKANSAS

Champagnolle	5,200	5,150
El Dorado	4,250	4,300
Lisbon	1,050	1,050
Nevada	1,150	1,100
Smackover, light	5,650	5,650
Smackover, heavy	42,300	42,050
Stephens	1,000	1,000
Others	200	100
Total, Arkansas	60,800	60,400
Increase		400

TEXAS (Outside Gulf Coast)

Panhandle District

	Jan. 11	Jan. 4
Carson County	9,500	9,400
Gray County	57,900	64,200
Hutchinson County	25,750	25,600
Wheeler County	500	700
Others	600	600
Total, Panhandle Texas	94,250	100,500
Decrease		6,250

North Texas

Archer County	17,900	18,300
Burkburnett	9,200	9,250
Electra	11,400	11,500
Iowa Park and K. M. A.	4,750	4,800
Montague-Cooke	12,700	13,050
Wilbarger	30,900	30,050
Others	1,000	1,200
Total, North Texas	87,850	88,150
Decrease		300

West Central Texas

Brown County	8,300	9,600
Callahan County	2,800	3,200
Coleman County	6,700	6,650
Eastland-Desdemona	6,100	6,100
Jack County	4,150	4,100
Palo Pinto County	500	500
Shackleford County	9,300	9,300
Stephens County	6,000	5,750
Throckmorton County	600	600
Young County	7,200	6,950
Others	1,300	1,350
Total, West Central Texas	52,950	54,100
Decrease		1,150

West Texas

	Jan. 11	Jan. 4
Crane and Upton Counties	44,000	43,000
Crocket County	2,000	2,100
Howard County	37,800	37,600
Jones County	2,350	2,200
Mitchell and Scurry Counties	2,350	2,300
Yates (Pecos County)	135,000	.....
Balance Pecos County	6,250	144,000
Reagan County	17,000	17,000
Winkler County	89,000	87,000
Others	2,900	2,900
Total, West Texas	338,650	338,100
Increase		550

East Central Texas

Boggy Creek	3,700	3,950
Corsicana-Powell	6,400	6,500
Currie	400	400
Mexia	5,000	5,050
Nigger Creek	300	300
Richland	300	300
Van Zandt County	3,900	5,800
Wortham	900	900
Total, East Central Texas	20,900	23,200
Decrease		2,300

Southwest Texas

Dale	350	350
Darst Creek	13,500	.....
Laredo District	9,150	9,000
Luling	10,700	10,600
Lytton Springs	900	900
Refugio County	21,800	18,800
Salt Flat	28,250	28,250
Somerset	1,500	1,350
Others	2,450	6,950
Total, Southwest Texas	88,600	76,200
Increase		2,950
Total, Texas (Outside Gulf Coast)	683,200	680,250
Increase		12,400

GULF COAST

Coastal Texas

Barbers Hill	21,350	14,450
Batson	1,300	1,300
Big Creek	5,800	7,650
Blue Ridge	1,900	2,000
Boling	1,200	1,050
Damon Mound	450	500
Fannett	2,000	*1,700
Goose Creek	5,200	5,250
Hull	9,600	9,850
Humble	16,000	13,650
North Dayton	1,700	1,800
Orange County	2,500	2,500
Pierce Junction	12,400	11,750
Port Neches	3,000	3,200
Raccoon Bend	8,950	8,600
Saratoga	1,000	1,000
Somerville	1,750	1,950
Sour Lake	2,400	2,400
South Liberty	7,300	7,500
Spindletop	20,000	18,400
Sugarland	12,000	11,900
West Columbia	6,200	6,200
Others	4,250	4,200
Total, Coastal Texas	148,450	*138,750
Increase		9,700

Coastal Louisiana

East Hackberry	1,600	1,900
Edgerly	800	850
Evangeline	2,100	3,050
Lockport	3,550	3,300
Old Hackberry	2,050	1,650
Sorrento Dome	150	150
Sulphur Dome	3,600	3,500
Vinton	3,900	4,200
Others	2,350	2,150
Total, Coastal Louisiana	20,100	20,750
Decrease		650
Total Gulf Coast	168,550	159,500
Increase		9,050

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,050	2,050
Elk Basin	800	750
Grass Creek	2,050	2,150
Labarge	1,900	2,300
Lance Creek	200	200
Lost Solider	3,300	3,200
Oregon Basin	4,300	4,300
Rock Creek	2,250	2,250
Salt Creek	27,300	34,500
Others	4,400	4,700
Total, Wyoming	48,550	56,400
Decrease		7,850

Montana

Cat Creek	1,200	1,250
Pondera	1,950	2,150
Sunburst	6,500	6,500
Others	100	100
Total, Montana	9,750	10,000
Decrease		250

Colorado

Florence	500	800
Fort Collins	1,900	1,800
Moffat (Craig)	1,000	1,050
Others	1,600	1,750
Total, Colorado	5,000	5,400
Decrease		400

New Mexico

Artesia	750	750
Balance Len & Eddy Counties	5,900	4,300
Hogback	400	400
Rattlesnake	850	850
Table Mesa	100	100
Others	950	950
Total, New Mexico	8,950	7,350
Increase		1,600
Total, Rocky Mountain	72,250	79,150
Decrease		6,900

CALIFORNIA

Dominguez	9,500	9,000
Elwood-Goleta	28,100	26,800
Huntington Beach	41,500	41,500
Inglewood	22,500	22,500
Kettleman Hills	13,400	11,000
Long Beach	104,000	104,000
Midway-Sunset	75,000	77,000
Santa Fe Springs	163,700	167,700
Seal Beach	28,000	28,500
Ventura Avenue	53,000	51,500
Others	161,000	161,000
Total, California	699,700	700,500
Decrease		800

MICHIGAN

Mt. Pleasant	7,750	7,450
Muskegon	7,000	7,250
Saginaw	200	250
Total, Michigan	14,950	14,950

*Revised.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended January 10 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Jan. 10
Plants Reporting....	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)..	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs..	54,070 + 1.9	107,210 + 4.4	67,293 + 4.5	28,291 — 5.6	52,061 + 4.5	308,925 + 3.0
Da. Av. Other Oils...	7,805 — 7.3	7,747 + 4.5	2,593 — 12.1	1,704 + 2.8	3,342	23,191 + 13.4
GASOLINE—Gallons						
Stocks, Jan. 3.....	23,464,000	62,382,000	20,832,000	12,516,000	11,319,000	130,513,000
Prod. 1-3 to 1-10.....	9,309,000 + 3.3	16,552,000 + 3.9	9,705,000 + 15.4	2,714,000 — 11.4	5,179,000 + 14.0	43,459,000 + 6.1
Ship. 1-3 to 1-10.....	9,330,000 + 4.0	15,790,000 + 6.5	8,512,000 — 2.6	3,816,000 — 1.1	4,245,000 — 9.2	41,693,000 + 1.5
Stocks, Jan. 10.....	23,443,000 — 0.1	63,144,000 + 1.2	22,025,000 + 5.7	11,414,000 — 8.9	12,253,000 + 8.3	132,279,000 + 1.4
Ratio Sales to Prod...	100.2%	95.4%	87.7%	140.6%	82.0%	95.9%
KEROSENE—Gallons						
Stocks, Jan. 3.....	15,287,000	8,067,000	2,571,000	143,000	1,516,000	27,584,000
Prod. 1-3 to 1-10.....	1,370,000 — 12.2	2,556,000 + 7.3	1,486,000 + 8.4	.....	331,000 +303.0	5,743,000 + 4.7
Ship. 1-3 to 1-10.....	1,818,000 + 20.2	1,881,000 — 11.9	1,553,000 + 9.6	111,000	255,000 + 60.4	5,618,000 + 7.5
Stocks, Jan. 10.....	14,839,000 — 2.9	8,742,000 + 8.4	2,504,000 — 2.6	32,000 — 77.6	1,592,000 + 5.0	27,709,000 + 0.5
Ratio Sales to Prod...	132.7%	73.6%	104.5%	.....	77.0%	97.8%
STOVE DISTILLATE—Gallons						
Stocks, Jan. 3.....	3,760,000	4,448,000	987,000	44,000	300,000	9,539,000
Prod. 1-3 to 1-10.....	432,000 — 39.0	1,100,000 + 33.0	204,000 — 10.1	155,000 +131.3	154,000 — 49.2	2,045,000 — 4.1
Ship. 1-3 to 1-10.....	933,000 +119.0	687,000 —362.3	187,000 — 21.4	83,000 — 38.5	154,000 + 19.3	2,044,000 — 15.3
Stocks, Jan. 10.....	3,259,000 — 13.3	4,861,000 + 9.3	1,004,000 + 1.7	116,000 +163.6	300,000	9,540,000 + 0.01
Ratio Sales to Prod...	215.9%	62.5%	91.7%	53.5%	100.0%	99.95%
GAS OIL—Gallons						
Stocks, Jan. 3.....	3,081,000	38,774,000	3,059,000	11,120,000	3,504,000	59,538,000
Prod. 1-3 to 1-10.....	1,253,000 + 7.6	1,330,000 + 70.4	139,000 — 91.7	825,000 — 0.5	2,065,000 + 10.2	5,612,000 — 44.1
Ship. 1-3 to 1-10.....	972,000 — 23.8	1,972,000 — 54.8	324,000 — 80.7	1,137,000 + 62.4	1,764,000 — 33.5	6,169,000 — 42.2
Stocks, Jan. 10.....	3,362,000 + 9.1	38,132,000 — 1.7	2,874,000 — 6.0	10,808,000 — 2.8	3,805,000 + 8.6	58,981,000 — 0.9
Ratio Sales to Prod...	77.6%	148.3%	233.1%	137.8%	85.4%	109.9%
FUEL OIL—Gallons						
Stocks, Jan. 3.....	10,265,000	30,417,000	69,030,000	13,454,000	22,716,000	145,882,000
Prod. 1-3 to 1-10.....	4,283,000 — 1.4	6,318,000 + 15.3	8,890,000 + 12.6	4,253,000 + 12.8	5,185,000 — 6.9	28,929,000 + 6.9
Ship. 1-3 to 1-10.....	4,092,000 — 14.9	7,107,000 + 0.4	7,249,000 — 7.9	7,124,000 + 15.4	4,901,000 — 16.9	30,473,000 + 4.4
Stocks, Jan. 10.....	10,456,000 + 1.9	29,628,000 — 2.6	70,671,000 + 2.4	10,583,000 — 21.3	23,000,000 + 1.3	144,338,000 — 1.1
Ratio Sales to Prod...	95.5%	112.5%	81.5%	167.5%	94.5%	105.3%

Gasoline Produced by Various Methods, Week Ended January 10

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	5,737,000	61.7	11,365,000	68.6	6,638,000	68.4	2,530,000	93.2	1,843,000	35.6	28,113,000	64.6
Cracked.....	2,696,000	29.0	4,271,000	25.9	1,801,000	18.6	90,000	3.3	2,826,000	54.6	11,684,000	26.9
Natural.....	876,000	9.3	916,000	5.5	1,266,000	13.0	94,000	3.5	510,000	9.8	3,662,000	8.4
Total.....	9,309,000		16,552,000		9,705,000		2,714,000		5,179,000		43,459,000	

+ or — columns are % change over previous week.

Stocks Rise as Gasoline Output Is Increased

Staff Special—By Telegraph
TULSA, Jan. 14

GASOLINE production at refineries that report their operating statistics to this publication increased 1,500,000 gallons in the week ended Jan. 10. Increase was due to crude runs being boosted 9000 barrels daily average, while other oils charged were increased 2600 barrels daily.

Gasoline shipments increased 600,000 gallons. Gasoline stocks increased 1,700,000 gallons. Kansas and West Texas refiners were the only ones to draw on gasoline stocks.

Kerosene production and shipments increased slightly, but 120,000 gallons went into storage.

Stove distillate production and shipments were even and stocks were unchanged. Kansas refiners enjoyed a good increase in business due probably to blizzards in the middle west.

Gas oil production and shipments

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Jan. 10. Change in stocks figures from Dec. 13.

GASOLINE

	Gallons
Production	174,517,000
Shipments	150,996,000
Net change in stocks	+23,521,000
Ratio sales to production	86.5%

KEROSENE

	Gallons
Production	23,643,000
Shipments	23,358,000
Net change in stocks	+285,000
Ratio sales to production	98.8%

STOVE DISTILLATE

	Gallons
Production	10,241,000
Shipments	10,219,000
Net change in stocks	+22,000
Ratio sales to production	99.8%

GAS OIL

	Gallons
Production	31,255,000
Shipments	30,963,000
Net change in stocks	+282,000
Ratio sales to production	99.1%

FUEL OIL

	Gallons
Production	114,066,000
Shipments	125,297,000
Net change in stocks	—11,231,000
Ratio sales to production	109.8%

were reduced almost by half and stocks were reduced 500,000 gallons.

Fuel oil stocks were reduced 1,500,000 gallons, although production was up slightly and shipment lower.

Minnesota District Code Meeting

SUPERIOR, Wis., Jan. 11.—The third district conference of the Code of Ethics bureau in the northwest will be held in Hibbing, Minn., the evening of Jan. 21 at the Androy hotel. Paul E. Hadlick, chairman of the Minnesota-North Dakota code bureau, will explain the code and lead the discussion. The meeting begins with a dinner. Reservations may be made with J. V. Quinlan, Reed-Hynes-Quinlan Oil Co., Hibbing, Minn.

CLEVELAND, Jan. 11.—Roy Reed of the Kanotex Refining Co., and president of the Kansas City Oil Men's club is at Research hospital at Kansas City. He underwent an operation for appendicitis on Jan. 8.

First Cross Section Of Regional Series

(*Continued from Page* 53)

are assembling a series of areal geologic maps by counties. As soon as they have these completed they are to start on the subsurface correlations. It is to be hoped that this can be done in the not too distant future.

Meanwhile, as drilling in the western part of Oklahoma and Kansas progresses the additional geologic information so gathered can be added to the cross-sections already drawn. Their uniformity permits this to be done as new areas are developed. Eventually, correlations over the whole of the Mid-Continent and Texas will be connected.

Beds then may be traced with ease and certainty from one end of the territory to another. Structures, both local and regional, may be worked out and their relationship to major geologic trends better understood.

These are but a few of the more obvious benefits to be derived from the compilation of data in this readable form. They are the ones having the greatest present value to the oil industry. To research students in universities and colleges however, the great mass of facts contained in the complete series will have a different, though none the less important, appeal.

These correlations will aid them in developing their ideas on many phases of geologic history. Sedimentation and geologic forces with their relation to structures of all kinds will have an added meaning. Outranking all of these probable developments, at least from the standpoint of the scientist, is the possibility of determining the origin of oil. Certain it is that much will be learned about its accumulation.

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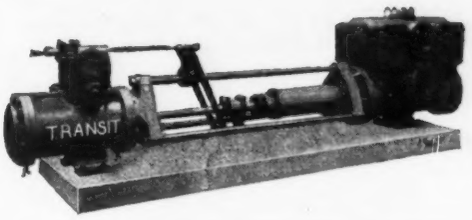
TRANSIT Block Valve PUMPS



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Refinery - Tank Wagon Markets

National Petroleum News

January Lull in Trading Continues; Gasoline Price Trends Mixed

CLEVELAND, Jan. 14

PRICE trends were decidedly mixed in the various refinery markets throughout the country last week. Gasoline prices continued to move downward in western Pennsylvania and along the Atlantic seaboard whereas they showed signs of stiffening, and even advanced in some instances, in middle western and California markets.

The usual January lull in jobber activity still prevailed and fluctuating tank wagon and service station markets, experienced many times in former years at this season, were lacking.

All in all, petroleum markets were sort of a drab affair. Negotiation of 1930 contracts had been completed for the most part, and with spot activity at low ebb, markets generally speaking were simply marking time.

Optimism was not wholly lacking. Following rather sharp increases late in December, Mid-Continent refiners reduced their crude runs and have kept gasoline stocks about on a level since Jan. 1. They were helped in this by a substantial increase in buying from jobbers who had let their inventories run low for Jan. 1 statements.

The California market also took a turn for the better although the improvement there was not as obvious as in the Mid-Continent. Apparently a good bit of the distress California gasoline offered the previous week, was "done away with" quietly. A New York buyer in the market for a part cargo of U. S. Motor was quoted 8.50 cents c.i.f. New York harbor whereas a number of cargoes had been offered 0.5 cent under this figure the previous week.

Abnormally high temperatures which hovered over the entire eastern half of the country had an adverse effect on burning oil prices. Reductions of 0.125 to 0.375 cent in domestic gas oils and from 5 to 10 cents per barrel in the high gravity fuel oils were the rule.

Lubricating oil price movements, like gasoline, were decidedly at variance according to districts. There was considerable dumping of surplus stocks reported in the Gulf coastal region. Demand improved slightly in western Pennsylvania. Neutral oils acted better in Pennsylvania than they have for some time past and bright stock prices showed signs of having about struck bottom.

A large short interest among the New York wax dealers and active covering by them was said to have caused the general advance of 0.125 cent in crude scale prices.

All Products Unchanged in Chicago

Staff Special

CHICAGO, Jan. 11

THE Chicago resale market passed the week ended Jan. 11 in a decidedly quiet manner, with little of major interest developing and prices of practically all products unchanged.

A few carlot marketers reported their sales of gasoline had been fairly good for the season of the year, while other sellers said business had been light. Gasoline prices were, generally speaking, unchanged over those prevailing at the end of the previous week. Spot sales of U. S. Motor were reported at prices ranging from 5.80 to 7 cents, f.o.b. Group 3. However, the bulk of sales reported by marketers and refiners were at 6.125 to 6.75 cents.

Practically all sales of U. S. Motor reported under 6.125 cents were on goods originating at differential territory refineries and were for shipment to certain sections with favorable freight rates. The majority of the Chicago marketers reported 6 cents was their bottom buying price for U. S. Motor gasoline in Group 3, and several said it was harder to obtain goods at this figure toward the end of the week. A few Oklahoma refiners, who had quoted Motor at 6 cents for resale, were reported to have advanced their prices to 6.25 cents on Jan. 10 and 11.

U. S. Motor gasoline for shipment into Ohio continued to move at considerably lower prices than prevailed for the Standard of Indiana territory. Sales of gasoline, for movement into Ohio from Indiana and Illinois refineries, were reported at about 9 cents delivered. One marketer reported that some Louisiana U. S. Motor was sold for shipment into Cincinnati at 8.50 cents delivered.

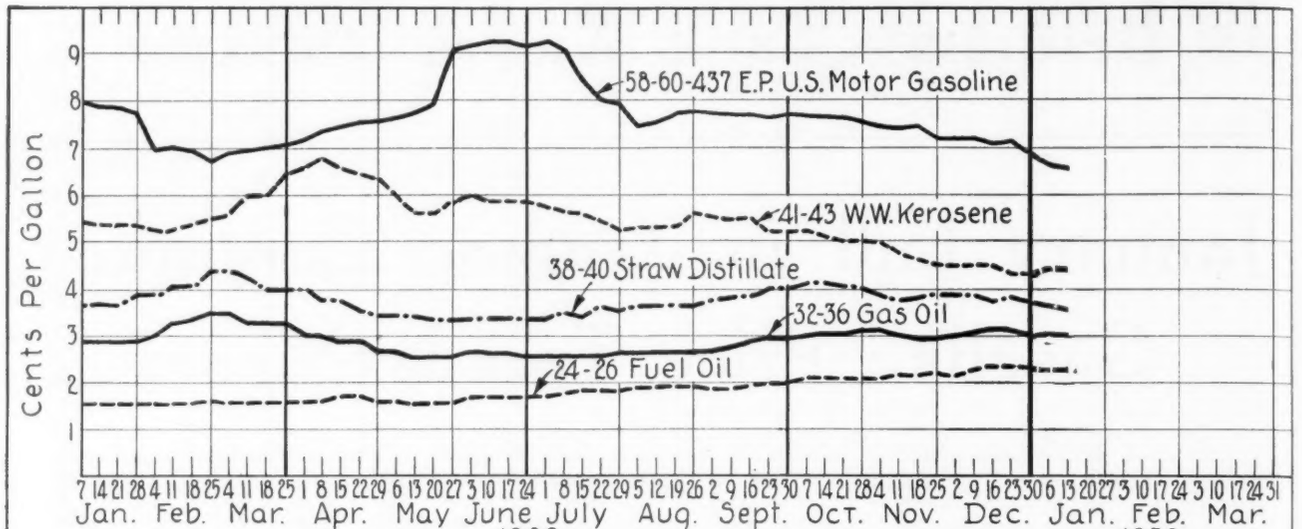
Many of the trade continued to report a better demand for the higher gravity gasolines than for U. S. Motor. Prices of these grades were generally unchanged over the week.

Kerosenes continued inactive, with most sellers reporting only occasional orders. One or two sellers reported a slightly better demand last week than for some time past. No change was noted in prices. Sales of 41-43 w.w. were mostly at 4 to 4.25 cents and of the 42-44 w.w. at 4.375 to 4.75 cents.

The tank wagon demand for furnace oils was considerably improved over the previous week, but lack of zero weather continued to hold distribution below the level attained last year, many Chicago distributors reported. However, most of these distributors reported they were holding fewer tank cars on "track," which they were unable to unload, than was the case at the end of the previous week, and that they believed business would be back to normal if the weather turned cold.

Most sellers reported a comparatively light movement of distillate and tank car prices were about 0.125 cent lower toward the end of the week. An occasional sale of 38-40 straw distillate was reported at 3.50 cents,

Current Prices of Principal Mid-Continent Refined Products


58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Cents Per Gallon
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

but the bulk of this grade moved at 3.625 to 3.875 cents.

Demand for zero gas and fuel oils was not heavy last week. The quietness of the tank wagon market for these products continued to be reflected in the tank car market. Although occasional cars of "distress" furnace oils were being offered at lower prices, there was little change apparent in the general market over the week.

Unsettled weather with rather frequent precipitation is predicted for next week by the Chicago weather bureau. Temperatures probably will be close to the seasonal normal.

Quaker State Buys McKean Refinery

CLEVELAND, Jan. 14.—The Quaker State Oil Refining Co. of Oil City, Pa., has purchased the McKean County Refining Co. with a plant located at Farmers Valley, Pa., in the Bradford fields. The plant has a capacity of 1000 barrels per day and is equipped to produce a complete line of lubricating oils.

The McKean county plant was built in 1923. It is to be enlarged by its new owners and its present equipment improved to aid in meeting the growing demand for Quaker State oils. The Quaker State interests now own the Emlenton Refining Co., Emlenton, Pa.; the Independent Refining Co., Oil City, Pa.; and the Ohio Valley Refining Co., St. Marys, W. Va.

TULSA, Jan. 11.—Barnsdall Refineries, Inc., expects to be able to make shipments of Ethyl gasoline the latter part of this month. The blending plant is almost completed although weather conditions have delayed construction.

Shipments From Southern California

LOS ANGELES, Jan. 8.—Shipments of bulk petroleum from Southern California ports for week ended Jan. 4 were as follows: (barrels)

Destination	Crude	Gasoline	Diesel	Distillate	Kerosene	Fuel	Gas-Oil
Pacific for.....	139,051	.....	33,320	.....	.....	145,900	11,212
Atlantic dom..		681,009	.....	.....	.....	.....	77,621
Atlantic for...		416,887	.....	.....	.....	.....	.....

Bulk petroleum shipments for month of December from southern California ports showed an increase of 786,696 barrels as compared with the month of November giving a total of 10,887,171 barrels, of which 4,239,957 barrels went to Pacific domestic ports; 2,798,800 barrels to Pacific foreign; 2,432,211 barrels to Atlantic domestic and 1,416,203 barrels to Atlantic foreign ports.

These shipments were distributed as follows:

Destination	Crude	Gasoline	Kerosene	Distillate	Diesel	Fuel
Pacific dom.....	781,466	1,010,806	2,672	18,360	161,889	2,264,764
Pacific for.	408,878	421,648	287,938	502	243,166	1,436,668
Atlantic dom.....	.....	1,545,197	53,120	357,005	347,676	129,213
Atlantic for.	.....	1,416,203	.....	.....	.....	.....

Figures in barrels of 42 gallons.

Prices 10 Years Ago
Jan. 12, 1920

	Oklahoma	Penna.
58-60 U. S. Motor.....	17.00–17.25c	19.75–20.00c
80-84 Natural	22.75–23.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	10.25–10.50c	14.00–14.25c
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$2.00–$2.10	10.00c
Crude (Okla. 35-35.9)....	$3.00	$5.00
Chicago tank wagon		21.00c

Prices A Year Ago
Jan. 14, 1929

	Oklahoma	Penna.
58-60 U. S. Motor.....	7.9063c	10.00–10.50c
Grade A Natural	6.25–6.75c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.)	5.375–5.50c	7.75–8.00c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.625–$0.675	4.75–5.25c
Crude (Okla. 35-35.9)....	$1.31	$4.00
Chicago tank wagon		15.00c

Mid-Continent Refinery Markets

Increased Shipments Bolster Gasoline

Staff Special
TULSA, Jan. 11

LOWER crude runs and a substantial increase in gasoline shipments after the first of the year inventories caused a more optimistic feeling in the Mid-Continent the second week of January, despite the fact that the entire middle west was in the grip of a blizzard.

There were only minor changes in the gasoline price structure in Oklahoma. A majority of refiners continued to quote 6.25 to 7 cents for 58-60 U. S. Motor, and in most cases gasoline moved from this district direct to jobbers at prices under 6.25 cents a gallon was off specification. Resale buyers said it was more difficult to obtain gasoline meeting U. S. Motor specifications at 6 cents.

North and West Texas refiners reported an improved demand for the small amount of U. S. Motor made in those districts at present and virtually all the distress gasoline was taken off the market. A few quotations were reported at 6 cents, group 3 freight basis, which netted the sellers around 5.75 cents a gallon f.o.b. plant.

Prices for 58-60 U. S. Motor gasoline in Kansas covered a wider range. A majority of refiners quoted at 6.625 to 7.25 cents.

No price changes were made in Arkansas and Louisiana districts for 58-60 U. S. Motor. It was understood that in both districts the bulk of this grade was going into storage due to the fact that demand largely was for more volatile gasolines and premium grades.

The higher gravity gasolines in all districts sold within narrower price ranges, with the top prices moving downward and the minimum prices moving upward.

Natural Gasolines

Natural gasolines prices moved to lower levels, being 0.50 to 1 cent under the previous week's quotations.

One large Gulf refiner bought more than 100 cars of Grade AA for both prompt and future delivery, at 5 cents a gallon. Another buyer purchased odd car lots at current prices. These purchases gave some relief to smaller manufacturers who had distress gasoline.

There was little Grade A available. The scarcity of this product was attributed by several manufacturers to the colder weather causing a smaller output. On Jan. 10 one large marketer of naturals announced he would pay 5.50 cents for Grade A.

Fuel Oils

The colder weather stimulated a better demand for fuel oil. There was some discussion about the offering of Luling and Refugio crudes in competition with zero fuel oils. Sellers still moved the two crudes on a Group 3 freight basis at prices under those quoted by sellers of the higher gravity zero grades of fuel oil.

The only price reduction of importance during the week was for the 28-30 zero fuel oil. The high of last week's price range was lower by 5 cents. One seller offered a limited number of cars at $1.15 per barrel. Some 14-16 and 16-20 fuel oils were offered at lower prices but in almost every instance the cold tests were high.

These grades with a cold test of 30 degrees Fahr. and under, were quoted at $0.70 to $0.90 per barrel. In seeking fuel oils, buyers continued to be interested more in cold test than in the gravity.

Distillates and Gas Oils

Shipping instructions for distillates were larger in volume following the cold snap. Prices were unchanged. Jobbers were reported to have had sufficient distillate in storage to tide them over a short cold period. Unless there is a protracted period of cold weather or an improvement in kerosene prices, many sellers doubt that prices for distillate will show any change during the month.

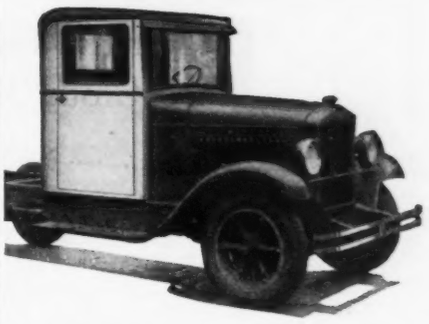
Kerosene

More than 1,000,000 gallons of 41-43 kerosene were bought Jan. 4 and 6 by an Oklahoma marketer for a large Independent refiner for shipment over January. The price was understood to have been 4 cents a gallon f.o.b. north Texas plants, shipments to be made to the gulf for exporting.

Domestic market prices were generally unchanged.

Bright Stock, Neutral Oil, Wax

Refiners made no changes in bright stock and neutral oil prices. One or two reported they were still out of the spot market while a majority of others said business was light. Wax prices lost more ground. Buyers showed little interest in the spot market and 124-126 white crude scale was offered at slightly lower prices. The few sales reported were at 2.75 to 3 cents.



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NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect January 13

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	6.8611	(Wt. Avg.)	6.8611	(Wt. Avg.)	.....
Kansas	6.50–6.75	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	7.2500	(Wt. Avg.)	Kansas only.
North Texas	6.25–6.375	.....	6.125–6.375	.....	.....
West Texas	6.25–6.375	.....	6.125–6.25	.....	.....
Louisiana-Arkansas	6.25–6.75	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	7.00	.....	State or differential haul.
Indiana-Illinois	6.625–7.00	.....	.....*	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, Jan. 11

LITTLE of major interest developed in the Chicago market the past week and prices of practically all products were unchanged. The bulk of sales of U. S. Motor gasoline still were reported at 6.125 to 6.75 cents. Sales of goods from differential territory refineries were reported at under these figures. Most carlot marketers reported their buying prices in Group 3 still were at a minimum of 6 cents for U. S. Motor, and several said it was harder to obtain goods at this figure.

Following prices represent sales made on Group 3 freight basis, although shipments may originate elsewhere.

	Prices Jan. 13	Prices Jan. 6	Prices Dec. 30
58-60 U. S. Motor, 437 e.p.	6.125– 6.75	6.125– 6.75	6.25 – 7.00
60-62 437 e.p. gasoline	6.25 – 7.00	6.25 – 7.00	6.375– 7.00
60-62 400 e.p. gasoline	6.75 – 7.125	6.75 – 7.125	6.75 – 7.25
64-66 375 e.p. gasoline	7.625– 8.00	7.625– 8.00	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.125– 8.375	8.25 – 8.375	8.25 – 8.375
41-43 w.w. kerosene	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
42-44 w.w. kerosene	4.375– 4.75	4.375– 4.75	4.375– 4.75
38-40 straw distillate	3.625– 3.875	3.75 – 3.875	3.75 – 4.00
32-36 ordinary dark gas oil	2.625– 2.875	2.75 – 3.00	2.75 – 3.00
32-36 dark zero gas oil	3.125– 3.375	3.25 – 3.375	3.25 – 3.375
32-36 straw zero gas oil	3.25 – 3.50	3.375– 3.50	†3.375– 3.50
28-30 zero fuel oil	$1.175–$1.25	$1.175–$1.25	†$1.20 –$1.25
28-30 fuel oil	$1.075–$1.125	$1.075–$1.125	$1.075–$1.125
24-26 fuel oil	$0.90 –$0.975	$0.90 –$0.975	$0.90 –$0.975
18-22 fuel oil, low sulfur	$0.80 –$0.85	$0.80 –$0.85	$0.775–$0.85
18-22 fuel oil, high sulfur zero	$0.80 –$0.85	$0.80 –$0.85	†$0.775–$0.85

Weighted Average Prices

OKLAHOMA

	Jan. 13		Jan. 6		Dec. 30	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e.p.	36	6.8611	37	6.8909	31	6.9637
60-62 437 e.p. gasoline	No sales reported		7	6.9464	8	6.8750
60-62 400 e.p. gasoline	1	7.3750	4	7.4375	11	7.2727
64-66 375 e.p. gasoline	6	7.8750	2	8.0000	3	7.9167

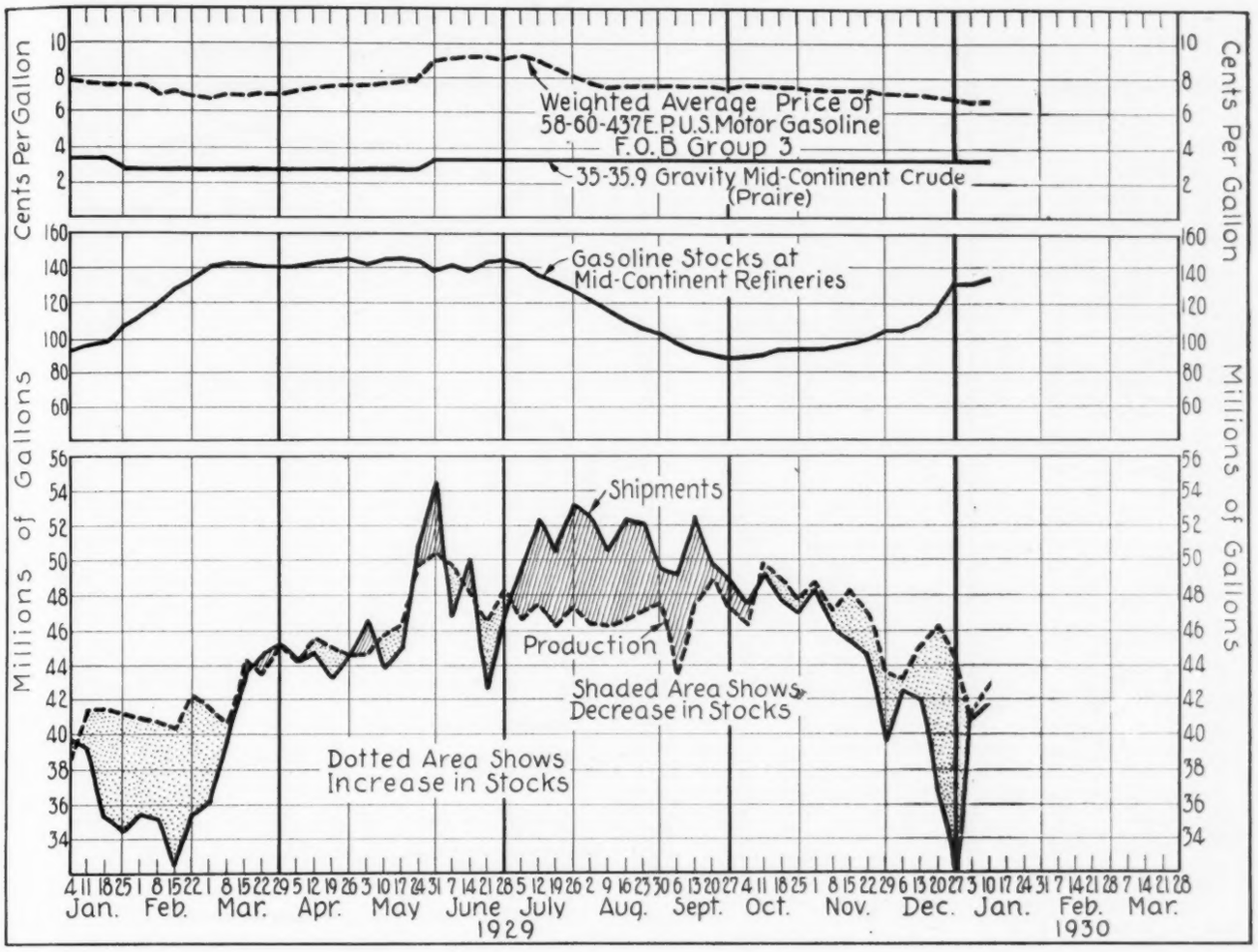
KANSAS

	Jan. 13		Jan. 6		Dec. 30	
	No. of cars	Price	No. of cars	Price	No. of Cars	Price
58-60 U. S. Motor, 437 e.p.	1	7.2500	1	7.5000	No sales reported	

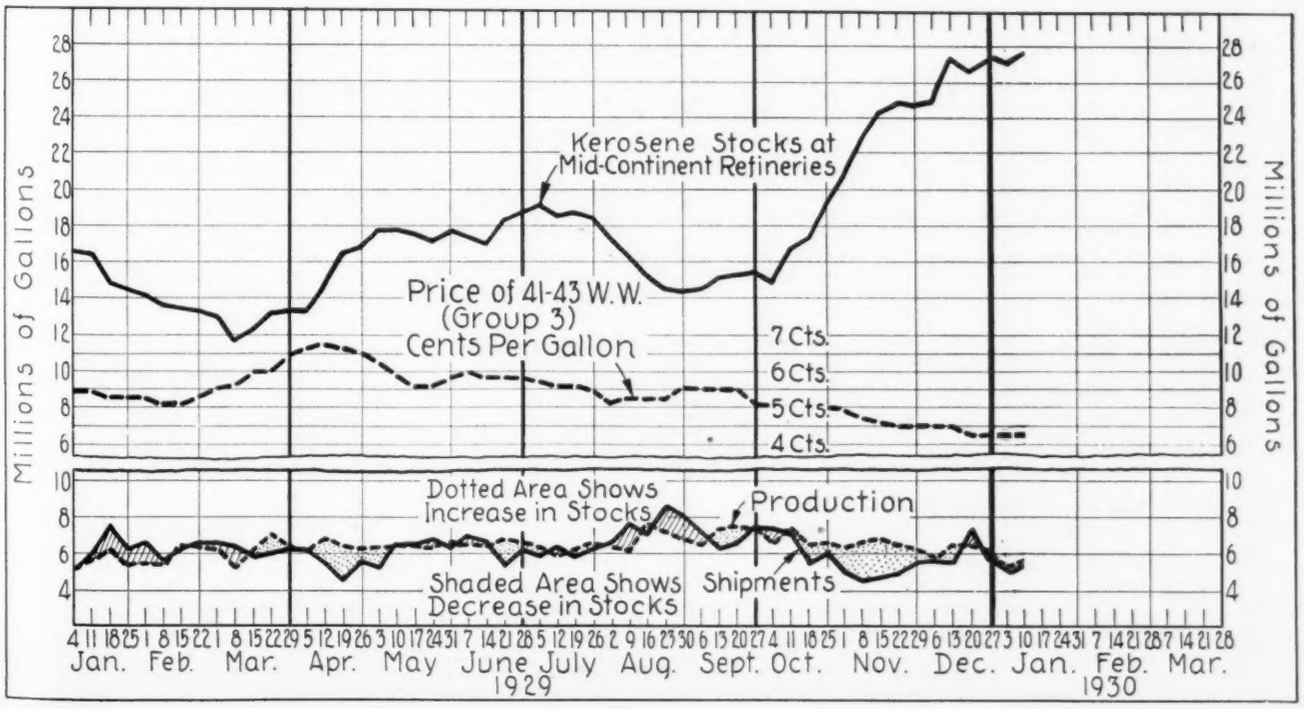
†Prices nominal

Barometer of Mid-Continent Refinery Market—Week Ending January 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of 58-60-437E.P.U.S.Motor Gasoline F.O.B Group 3
35-35.9 Gravity Mid-Continent Crude (Praire)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Shaded Area Shows Decrease in Stocks
Dotted Area Shows Increase in Stocks
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1929
1930

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 82


Millions of Gallons
Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W. (Group 3) Cents Per Gallon
7 Cts.
6 Cts.
5 Cts.
4 Cts.
Dotted Area Shows Increase in Stocks
Production
Shaded Area Shows Decrease in Stocks
Shipments
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1929
1930

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA	Prices Jan. 13	Prices Jan. 6	Prices Dec. 30
48-50 450 e.p. naphtha...	6.75	6.50 – 6.75	6.50 – 7.00
50-52 450 e.p. naphtha...	6.75	6.50 – 6.75	6.50 – 7.00
56-58 450 e.p. gasoline...	6.125– 6.25	6.125– 6.375	6.25 – 6.50
58-60 450 e.p. gasoline...	6.25 – 6.50	6.25 – 6.375	6.25 – 6.50
64-66 390 e.p. gasoline...	7.25 – 7.625	7.25 – 7.625	7.375– 7.625
68-70 350-360 e.p. gasoline	8.00 – 8.25	8.00 – 8.25	8.125– 8.25
PENNSYLVANIA			
52-54 Naphtha.....	7.25 – 7.75	7.25 – 7.75	7.25 – 8.00
54-56 Naphtha.....	7.25 – 8.00	7.25 – 8.00	7.25 – 8.25
58-60 U.S. Motor 437 e.p.	7.75 – 8.25	7.75 – 8.75	7.75 – 8.75
60-62 400-410 e.p. gasoline	8.125– 8.50	8.125– 8.75	8.25 – 8.75
64-66 390 e.p. gasoline....	8.375– 8.75	8.375– 9.00	8.50 – 9.00
68-70 350-360 e.p.....	9.375–10.00	9.375–10.00	9.50 –10.25
OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)			
U. S. Motor Gasoline			
Ohio, delivery at any point.....	9.50	9.50	9.50
KANSAS (F. O. B. refinery Kansas destination)			
60-62 437 e.p. gasoline...	7.00 – 7.25	7.25	.....
60-62 400 e.p. gasoline...	7.25 – 7.50	7.25 – 7.75	7.25 – 7.75
64-66 375 e.p. gasoline...	7.50 – 8.00	7.625– 8.00	7.625– 8.00
NORTH TEXAS			
56-58 450 e.p. gasoline...	6.00 – 6.25	6.00 – 6.25	6.25
58-60 450 e.p. gasoline...	6.125– 6.25	6.00 – 6.25	6.25
58-60 U.S. Motor 437 e.p.	6.125– 6.375	6.125– 6.375	6.25 – 6.50
60-62 400 e.p. gasoline...	6.75 – 7.00	6.75 – 7.00	6.875– 7.00
64-66 390 e.p. gasoline...	7.25 – 7.50	7.25 – 7.50	7.375– 7.50
64-66 375 e.p. gasoline...	7.50 – 7.75	7.75	7.75
68-70 350-360 e.p. gasoline	7.875– 8.25	8.00 – 8.375	8.125– 8.375
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
50-52 naphtha.....	5.625– 5.75	5.75	5.75
58-60 437 e.p. gasoline...	6.125– 6.25	6.00 – 6.125	6.125– 6.375
58-60 U.S. Motor 437 e.p. gasoline.....	6.125– 6.25	6.125– 6.25	6.25 – 6.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	7.00	7.00	7.25
ARKANSAS (Ark., N. La. and Miss. destination)			
58-60 U.S. Motor 437 e.p.	7.00	7.00	7.25
CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)			
54-58 U.S. Motor 437 e.p.	‡9.00 –10.00	‡9.00 –10.00	‡9.50 –10.50
58-61 375-400 e.p. gasoline	10.00 –11.00	10.00 –11.00	10.50 –11.50
42-45 Engine Distillate 445-480 e.p.....	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

‡For outside state shipment price was 7.25–8.25c on Oct. 21. 7.00–8.00c on Oct. 28 and Nov. 4. 6.50–7.25c on Nov. 11, 18 and 25. 7.00–7.75c on Dec. 2, 9, 16, 23, 30, Jan. 6, and 13.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery.....	5.00	5.50 – 5.75	6.00
Grade A, 72-79.9, 90% Recovery.....	5.50	5.50 – 5.75	6.125
Grade BB, 84-92, 85% Recovery.....	4.25	4.75 – 5.00	5.25 – 5.50
Grade B, 76-83.9, 85% Recovery.....	4.25 – 4.50	4.75 – 5.00	5.50
Grade C, 80-92, 78% Recovery.....	4.00	4.75 – 5.00	5.25 – 5.50
NORTH TEXAS (F. o. b. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery.....	5.00	5.50 – 5.75	6.00
Grade A, 72-79.9, 90% Recovery.....	5.50	5.50 – 5.75	6.125
Grade BB, 84-92, 85% Recovery.....	4.25	4.75 – 5.00	5.25 – 5.50
Grade B, 76-83.9, 85% Recovery.....	4.25 – 4.50	4.75 – 5.00	5.50
Grade C, 80-92, 78% Recovery.....	4.00	4.75 – 5.00	5.25 – 5.50

†Prices nominal ††Only one refiner quoting *Quotations only

NORTH LOUISIANA (F. o. b. Monroe District)	Prices Jan. 13	Prices Jan. 6	Prices Dec. 30
Grade AA.....	†5.25	†6.00	†6.25
Grade BB.....	†4.50	†5.25	†5.75
Grade C.....	†4.25	†5.25	†5.75
CALIFORNIA			
75-85, 375-390 e.p. blend	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene.....	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
46 w.w. kerosene.....	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
47 w.w. kerosene.....	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
300 mineral seal.....	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
OKLAHOMA			
41-43 w.w. kerosene.....	4.125– 4.50	4.125– 4.50	4.125– 4.50
42-44 w.w. kerosene.....	4.25 – 5.00	4.25 – 5.00	4.375– 5.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene.....	4.25 – 4.75	4.50 – 4.75	4.50 – 5.00
42-44 w.w. kerosene.....	4.50 – 5.00	4.75 – 5.00	4.75 – 5.25
NORTH TEXAS			
40-42 w.w. kerosene.....	4.00	4.00	4.00
41-43 w.w. kerosene.....	4.125– 4.25	4.125– 4.25	4.00 – 4.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene.....	5.00 – 5.25	5.25	5.25
42-44 w.w. kerosene.....	5.25 – 5.50	5.25 – 5.50	5.50
ARKANSAS (Ark., N. La. and Miss. destination)			
42-44 w.w. kerosene.....	5.25 – 5.50	5.25 – 5.50	5.50
CALIFORNIA			
38-40 w.w. kerosene.....	4.50 – 5.50	4.50 – 5.50	5.50 – 6.00

NEUTRAL OIL

PENNSYLVANIA			
Vis.		**(Viscosity at 73°F.)**	
200 No. 3 Assoc. Filt.....	24.50 –27.00	24.50 –27.00	24.50 –27.00
180 No. 3 Assoc. Filt.....	19.50 –23.00	19.50 –23.00	19.50 –23.00
150 No. 3 Assoc. Filt.....	15.50 –17.50	15.50 –18.00	15.25 –18.00
		(Non Viscous)	
34 Grav. 330-340 Flash..	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
****OKLAHOMA**			
Vis. **Color**		**(Viscosity at 100°F.)**	
100—No. 2.....	6.00 – 7.50	6.00 – 7.50	6.00 – 7.50
150—No. 3.....	7.75 – 8.50	7.75 – 8.50	7.50 – 8.50
150—No. 4.....	6.75 – 8.00	6.75 – 8.00	6.75 – 8.00
180—No. 3.....	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4.....	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
180—No. 5.....	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
200—No. 3.....	11.00 –13.00	11.00 –13.00	10.50 –12.00
200—No. 4.....	10.00 –11.00	10.00 –11.00	10.00 –11.00
200—No. 5.....	9.50 –11.00	9.50 –11.00	9.50 –11.00
220—No. 3.....	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....	12.00 –12.50	12.00 –12.50	12.00 –12.50
220—No. 5.....	11.00 –12.00	11.00 –12.00	11.00 –12.00
240—No. 3.....	13.00 –15.00	13.00 –15.00	13.00 –16.00
240—No. 4.....	12.00 –13.50	12.00 –13.50	12.00 –13.75
240—No. 5.....	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3.....	16.00 –17.00	16.00 –17.00	16.00 –17.00
280—No. 4.....	14.00 –16.00	14.00 –16.00	14.00 –16.00
280—No. 5.....	13.00 –15.00	13.00 –15.00	13.25 –15.00

****Represents Both Sales and Quotations.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis.	Color	Prices Jan. 13	Prices Jan. 6	Prices Dec. 30
		(Viscosity at 100°F., pour test 0)		
100	No. 2 Pale	6.00 – 6.50	6.00 – 6.50	6.00 – 7.00
200	No. 3 Pale	8.50 – 9.00	8.50 – 9.00	9.00 – 9.50
300	No. 3 Pale	9.50 –10.00	9.50 –10.00	9.75 –10.25
500	No. 3½ Pale	10.50 –11.00	10.50 –11.00	11.00 –11.50
750	No. 4 Pale	12.00 –12.50	12.00 –12.50	12.50 –13.00
200	No. 5½ Red Oil	7.50 – 8.00	7.50 – 8.00	7.75 – 8.25
300	No. 5½ Red Oil	8.50 – 9.00	8.50 – 9.00	8.75 – 9.25
500	No. 6 Red Oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
750	No. 6 Red Oil	11.50 –12.00	11.50 –12.00	11.50 –12.00

CALIFORNIA

Vis.	Color			
		(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. D at 210° Brt. St.	41.00 –42.00	41.00 –42.00	39.00 –42.00
150-160 Vis. D at 210° Brt. St.	37.00	37.00	37.00
150-160 Vis. E 210° Brt. St.	35.00 –36.00	35.00 –36.00	35.00 –36.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	9.00	9.00	9.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	23.50 –25.00	23.50 –25.00	24.00 –25.00
650 Steam Refined	29.00 –31.00	29.50 –31.00	29.50 –31.00
600 Flash	30.00 –32.00	30.00 –32.00	32.00 –33.00
‡630 Flash	35.00 –36.00	36.00 –36.50	36.00 –36.50
600 Warren E	31.50 –32.00	32.00 –32.50	32.00 –32.50
600 Oil City E	30.00 –31.00	30.00 –31.00	30.50 –31.00
600 D Filtered	35.00 –37.00	35.50 –37.00	36.00 –37.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	42.00 –43.00	42.00 –44.00	44.00 –46.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	40.00 –41.00	†41.00 –42.00	42.00 –44.00

‡Changed from 625 to 630 flash, Jan. 13.

WAX

PENNSYLVANIA (Per pound, New York)

122-124 white crude scale, a.m.p.	3.125	3.00 – 3.125	3.00 – 3.125
124-126 white crude scale, a.m.p.	3.125	3.00 – 3.125	3.125

**OKLAHOMA

124-126 White Crude Scale, a. m. p.	2.75 – 3.00	2.875– 3.00	3.00

CALIFORNIA

White crude scale, per pound, ton lots, a.m.p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.50 – 5.00	4.50 – 5.00	4.625– 5.00
30-34 fuel oil	4.50 – 4.875	4.50 – 4.875	4.625– 4.875
28-32 fuel oil	4.50 – 4.875	4.50 – 4.875	4.625– 4.875

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA

	Prices Jan. 13	Prices Jan. 6	Prices Dec. 30
38-40 straw distillate	3.625– 3.75	3.625– 3.875	3.625– 3.875
36-38 straw distillate	3.50 – 3.625	3.50 – 3.625	3.50 – 3.75
32-36 straw gas oil	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 straw gas oil zero	3.25 – 3.375	3.25 – 3.375	3.50
32-36 dark gas oil	2.75 – 2.875	2.75 – 3.00	2.875– 3.00
32-36 dark gas oil zero	3.125– 3.25	3.25 – 3.375	3.375
28-30 zero fuel oil (per bbl.)	$1.15	$1.15	$1.20 – 1.25
28-30 fuel oil (per bbl.)	$1.05 – 1.125	$1.05 – 1.15	$1.05 – 1.15
26-28 fuel oil (per bbl.)	$0.95 – 1.05	$0.975– 1.05	$1.00 – 1.05
24-26 fuel oil (per bbl.)	$0.95 – 1.00	$0.95 – 1.00	$0.95 – 1.00
22-26 fuel oil (per bbl.)	$0.95 – 1.00	$0.95 – 1.00	$0.90 –$1.00
18-22 fuel oil (per bbl.)	$0.80 – 0.85	$0.80 – 0.85	$0.80 – 0.85
16-20 fuel oil (per bbl.)	$0.70 – 0.90	$0.70 – 0.85	$0.75 – 0.85
14-16 fuel oil (per bbl.)	$0.70 – 0.90	$0.70 – 0.85	$0.70 – 0.85

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	3.875– 4.00	3.875– 4.00	3.875– 4.125
36-38 straw distillate	3.75 – 3.875	3.75 – 3.875	3.875
32-36 straw gas oil	3.50	3.50	3.50
18-22 fuel oil (per bbl.)	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90
10-14 fuel oil (per bbl.)	$0.825– 0.85	$0.775– 0.85	$0.775– 0.85

NORTH TEXAS

38-40 straw distillate	3.375– 3.50	3.50 – 3.75	3.50 – 3.75
38-40 p.w. treated distillate	3.50 – 3.75	3.625– 3.75	3.625– 3.75
32-36 gas oil, cracked	2.75 – 3.00	3.00 – 3.125	3.00 – 3.25
32-36 St. reduced gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.625
24-26 fuel oil (per bbl.)	$0.70 – 0.75	$0.725– 0.80	$0.75 – 0.80
20-24 fuel oil (per bbl.)	$0.60 – 0.70	$0.65 – 0.70	$0.65 – 0.70
18-22 fuel oil (per bbl.)	$0.60 – 0.65	$0.65	$0.65

**WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.50 – 2.75	2.50 – 2.75	2.625– 2.75
30-32 gas oil	2.375– 2.625	2.375– 2.625	2.375– 2.75
28-30 zero gas oil	2.75 – 3.00	3.00 – 3.25	3.00 – 3.25
18-22 fuel oil (per bbl.)	$0.60 – 0.70	$0.60 – 0.70	$0.60 – 0.70

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.25 – 3.50	3.50	3.50
32-36 gas oil, straw	3.25 – 3.50	3.50	3.50
14-16 fuel oil (per bbl.)	$0.75 – 0.85	$0.775– 0.85	$0.775– 0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.25 – 3.50	3.50	3.50
32-36 dark gas oil	3.25 – 3.50	3.50	3.50
28-30 gas oil	3.25	3.25	3.25
20-24 fuel oil (per bbl.)	$0.95	$0.95	$0.95
‡9-12 fuel oil (per bbl.)	$0.70	$0.70	$0.70
Black oil	3.25	3.25	3.25

‡Gravity changed from 14-16 fuel oil to 9-12 fuel oil Dec. 23.

CALIFORNIA (F. o. b. San Joaquin Valley. At San Francisco 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.45 –$0.60	$0.45 –$0.60	$0.45 –$0.60
14-18 Bunker oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.60 –$0.75
30-34 gas oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90
27 Plus Diesel oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
Lily White	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Cream White	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Light Amber	3.75	3.75	3.75
Amber	3.50	3.50	3.50
Red	3.25	3.25	3.25

PETROLEUM COKE

**OKLAHOMA

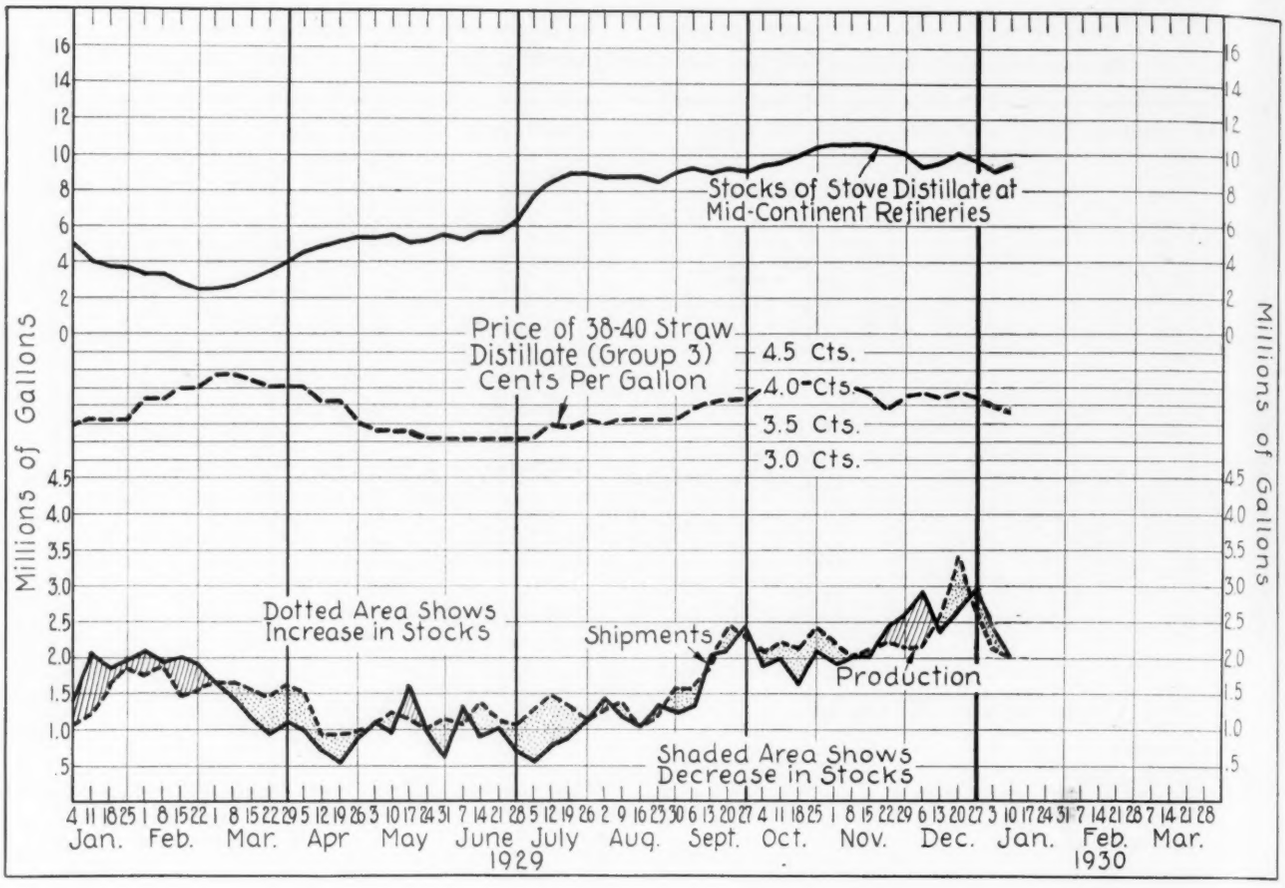
(Per ton in car lots)

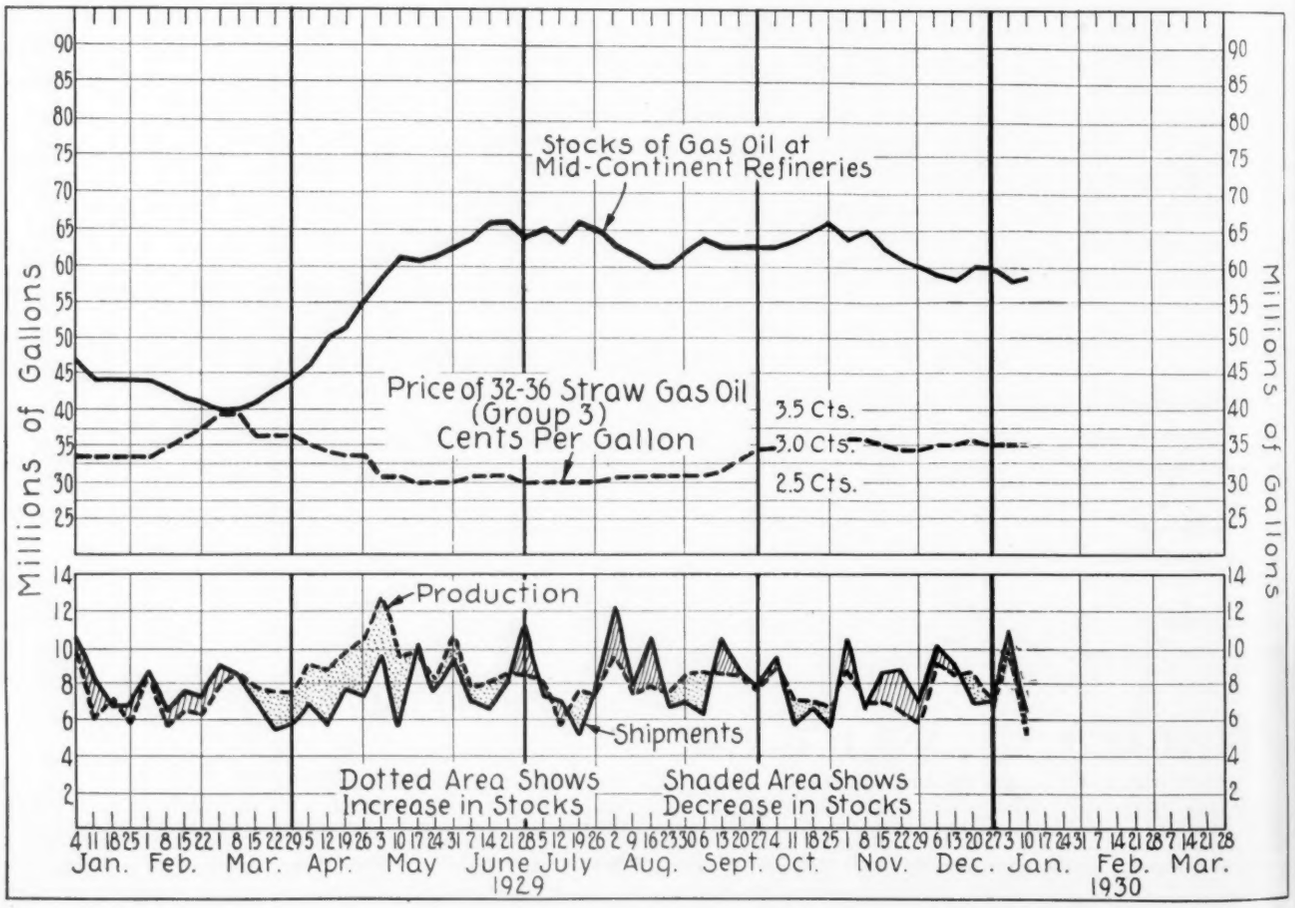
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending January 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts.
3.0 Cts.
Dotted Area Shows Increase in Stocks
Shipments
Production
Shaded Area Shows Decrease in Stocks
Jan. Feb. Mar. Apr May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1929
1930


Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Dotted Area Shows Increase in Stocks
Shaded Area Shows Decrease in Stocks
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1929
1930

PUTTING ANY GREASE WHERE IT BELONGS IN ANY WEATHER

HERE is efficiency . . . speed power . . . and profit. Lubrication has become a tremendous business and Balcrank Chassis Lubricators play no small part in this growing industry. The Balcrank "F" model illustrated above is air operated, with a tremendous grease pressure up to 6,000 pounds with either Alemite or Zerk fittings . . . easy to handle and a pleasure to operate. A gentle pressure on the trigger and a single shot of grease, automatically controlled to prevent waste, goes crashing into the bearing. And, zero weather won't stop a Balcrank. Here is quality and engineering perfection. Every Balcrank proves its superiority . . . from the fascinating P. C. to the remarkable Central Unit System. Write for complete information . . . whether you need a single unit or a Central Unit.

The Cincinnati Ball Crank Co., Cincinnati, O.

Balcrank Type D Chassis Lubricator, foot operated—develops up to 6,000 pounds pressure with any grease, in any weather, on any system. Capacity, 13 pounds.

Balcrank P. C. Type Chassis Lubricator, air operated, one pound capacity. Develops more pressure than is needed to send any grease into any system in any weather.

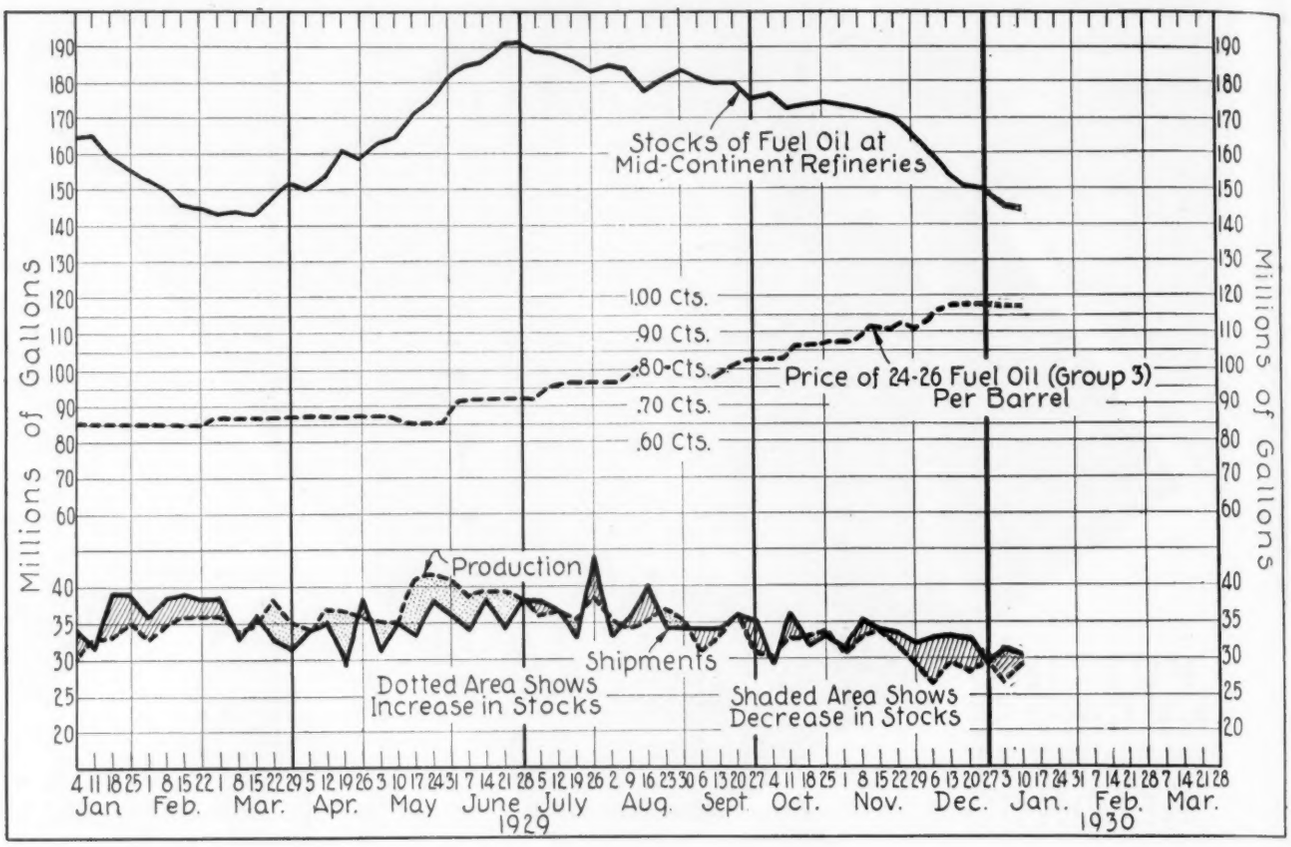
Specializing on Central Lubricating Units for modern service stations or lubritoriums . . . to handle any requirement.

BALCRANK

HIGH PRESSURE CHASSIS LUBRICATORS

Barometer of Mid-Continent Refinery Market—Week Ending January 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Gasoline Tax Evasion Found in Calif.

LOS ANGELES, Jan. 10.—That the state of California may be between $3,000,000 and $5,000,000 poorer as a result of successful efforts on the part of certain oil companies and individuals to evade the state gasoline tax is the charge made by A. L. Weil, general counsel for General Petroleum Corp.

An inquiry was started Nov. 9 when it was reported that a large quantity of gasoline had been stolen from a Signal Hill refinery. While engaged in this case the officials found that gasoline billed to be delivered out of the state had been side tracked and delivered to local jobbers and the tax not paid. At the time it was thought that the amount the state had been defrauded of would not exceed $100,000 but upon further inquiry other discrepancies were found.

Experts now believe that the evasion of the gasoline tax dates back to, if not before, the gasoline war of a year ago, when some of the smaller companies dropped their prices to almost the cost of production.

K. R. Kingsbury, president of Standard Oil Co. of California, upon hearing of the investigation stated that Standard had paid the tax on all gasoline sold within the state and that he did not believe the employees of his company were involved. He also stated that he had instructed the company's attorney to assist in the investigation and that the company's books and records were available for any examination. Other large companies have offered to cooperate.

Four men are under bond accused of gasoline tax fraud in California at present. It is reported that they billed railway tank cars of gasoline for Texas destinations and then ordered them switched to local sidetracks, where the gasoline had been dispensed by truck to "bootleg" stations.

Gasoline shipped out of the state is not taxed so that these brokers, and it appears others, found it a very profitable undertaking.

R. E. Collins, chairman of the State Board of Equalization, stated that a number of small gasoline distributors defrauded the state of approximately $100,000 through illegal reports on export gasoline. He added that he had been investigating the attempted evasion for the past two months and that about 15 other companies would come under investigation in addition to the eight or nine that had been covered already.

One instance of the illegal methods adopted to prevent payment of the tax was cited by Mr. Collins. His investigators found that fifty cars of gasoline that had been reported shipped to Cincinnati, tax free, had in reality not moved out of the state. He considered that the estimate of from 3 to 5 million dollars set by Mr. Weil would prove to be high, but believed that the loss would probably exceed one or two millions over a period of years.

Reed Reelected Head Of K. C. Oil Men

CLEVELAND, Jan. 11.—Roy Reed of the Kanotex Refining Co., was reelected president of the Kansas City Oil Men's Club at its annual meeting Jan. 6. George S. Allee, president of the Missouri Oil Men's Association, was reelected secretary.

The board of governors for the club in 1930 will be J. W. Wilson, Standard Oil Co. of Indiana; William Atkins, Skelly Oil Co.; Jack Nourse, Nourse Oil Co.; J. R. Battenfeld, Battenfeld Grease & Oil Co.; Roy Speak, Inter-State Oil Co.; A. J. McIlvain, Columbian Steel Tank Co.; and Mr. Reed.

Pennsylvania Market

Bright Stock Active

CLEVELAND, Jan. 11.—Prices of the majority of commodities continued to recede in the western Pennsylvania market in the week ended Jan. 11. There was quite a revival of activity in bright stocks around the middle of the week, placing these oils in better position than they have been in for three or four weeks, but demand for other oils was negligible with gasoline standing out rather prominently from this angle.

Prices for bright stock failed to respond to the considerably better demand which these oils experienced. Several 5 and 10 car orders for No. 8 color oil were said to have been placed, rather unusual for this time of the year, at prices ranging from 42 to 44 cents, lower pour test oils commanding the higher figure. These prices were unchanged from quotations of the previous week.

One company Jan. 11, however, reported it had advanced its quotation for new business to 45 cents, but at the same time asserted it could take on very little additional business for January shipment. Resale agents reported they were still in position to buy at prices which would permit them to quote 42 cents a gallon to the trade.

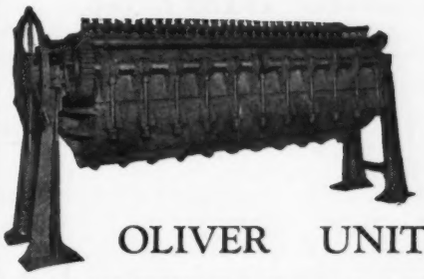
Cylinder stocks were quiet along with the rest of the market. Bright stock manufacturers had completed purchasing their January requirements the week before and subsequently there was little new buying in this section of the market. Prices for steam refined stocks were fairly steady. Filterable 600 was down 0.5 cent to 23 cents in some districts but still was quoted up to 25 cents in other districts.

Inclement weather probably played the biggest part in slowing up the demand for gasoline still further. Orders for the most part were confined to 1 and 2 car lots and many sellers said even these were scarce. U. S. Motor gasoline was offered plentifully at 7.75 to 8.25 cents; occasional cars were available at 7.625 cents. There were higher quotations also but very few sales were reported above 8.25 cents.

Kerosene, 45 water white, continued to be offered at 6 cents a gallon in one or two districts. Several refiners reported their stocks had been relieved considerably during the past two weeks with the result that they were quoting higher prices. At the same time there was quite a large volume still offered at 6 to 6.25 cents.

Prices for neutral oils and wax were unchanged.

Load and *Ship* Clean Lube Oils



TO assure shipment of clean lube oils, install the Sweetland Pressure Filter,—with special filter medium—at the loading stations. It provides a simple, positive, inexpensive method.

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Eastern Domestic Markets

Mild Weather Fails to Help Gasoline

Staff Special
NEW YORK, Jan. 11

EASTERN gasoline markets failed to react favorably to the morsel tendered them by the weatherman the past week. In fact, just the reverse was the case. Prices were lower at Baltimore and Philadelphia. Prices for heavy oils were unchanged and business was reported fair in all districts.

Mild weather the first few days of the week was experienced from Maine to Florida, setting an all time record high temperature at New York on Jan. 9. A few refiners said their shipments were slightly larger but in the majority of cases orders were no more numerous.

Gasoline prices at Philadelphia and Baltimore began to show signs of weakening around the middle of the week. The first intimation of lower prices came when a Philadelphia distributor of California gasoline reported he was meeting competition from sellers of regular U. S. Motor at 8.75 cents. This price was taken up by a majority of sellers resulting in a flat price of 8.75 cents being quoted for both California and regular U. S. Motor.

Baltimore sellers revised their quotations accordingly for shipment to certain districts only, at first, and later adopted the 8.75-cent quotation generally.

One large distributor in each of these districts and in New York, has made no changes in price. However, his spot sales at Baltimore and Philadelphia were few, he said, and he did not feel they were representative of the market. Spot business at New York, where the price remained at 9 cents, was larger, he said.

Prices in all other districts were unchanged and refiners reported spot business slow. Jobbers were ordering only enough material to fill their immediate requirements and evinced no interest whatever in futures.

Some shading was again reported at New York with regard to prices of regular U. S. Motor prices. One seller reported he had quoted 8.48 cents to a small account in feeling out the market. He did not get the business.

Many suppliers look for lower prices on the seaboard in the next few weeks because of the excessive amount of gasoline in storage and the proximity of the low consuming season. They believe jobbers feel the same way as evidenced by the hand-to-mouth buying they have been doing the past several weeks. A cut in Mid-Continent and California crude oil prices was also believed close at hand by several market students, unless production was drastically curtailed in the near future.

Tank wagon gasoline markets were unsettled the past week because of many companies changing their prices in various districts to meet those posted Jan. 6 by the Standard of New Jersey. The latest of these was the Atlantic Refining Co. The Standard of New York had made no change in its marketing policy up to Jan. 11 although there were reports among the trade that a change was contemplated.

A New York broker was reported seeking a part cargo of California gasoline the past week. The business had not been closed Jan. 11, although it was reported 8.50 cents, c.i.f. New York, had been quoted. None of the several cargoes offered at 8 cents last week was offered in the market this week.

The inter-coastal tanker market was quiet at the end of the week, in contrast to the early part when the demand for clean boats was such as to cause higher prices. Clean tonnage for January and February was reported freely available at the end of the week but dirty boats for January movement were reported scarce.

Gulf Coast Markets

Million Barrels of Panuco Crude Sold

Staff Special
NEW YORK, Jan. 11

GULF markets were featureless the past week. Grade C bunker oil at Tampico was quoted higher, but prices from the U. S. Gulf on all commodities both for export and domestic shipment, were unchanged. Panuco crude prices were lower. Foreign buyers showed no interest in the market.

Traders generally were of the opinion that bunker C fuel oil, f.o.b. Tampico, was worth $1.00 per barrel, an increase of 5 cents per barrel over the previous week. This price included a tax of approximately 12 cents per barrel. Demand for this commodity was slightly better the trade reported, although still below normal.

A report was heard early in the week that approximately 1,000,000 barrels of Panuco crude had been sold to England and Germany for shipment during 1930. The price governing these sales was reported between $0.70 and $0.75 per barrel. English buyers were said to have taken 750,000 barrels of the total.

In view of these sales several of the trade were of the opinion that spot cargoes could be purchased within the aforementioned price range. One or two eastern dealers reported current stocks of Panuco crude were large.

Stocks of heavy oils at the U. S. Gulf also were reported large by a majority of sellers, although there was no indication of lower prices. One company which has been storing most of its heavy oil for cracking stock was quoting $0.80 for bunker oil in cargo lots. This was not a representative quotation, however; the majority of sellers were quoting from $0.70 to $0.75. One company continued to quote low gravity bunker C fuel below $0.70.

Exporters of heavy oils from U. S. Gulf showed no interest in the market. The marine demand was normal, however, most of the trade reported. A number of suppliers were quoting export prices for barrel goods for the latter class business although one or two said they were making price concessions to buyers of large quantities who could bunker their ships at the company's docks. One company reported making a price of $0.90 per barrel to this class of boats at two of its Texas terminals.

Some changes in trans-Atlantic tanker rates were recorded early in the week when several dirty boats were reported available. At the end of the week the market was unchanged although several companies were seeking charters.

Correction

The new price structure of the Standard Oil Co. of New Jersey does not apply to operations in Delaware, the company has announced. It previously had been reported that marketing operations in the state came under the schedule which became effective Jan. 8.

Wax Markets

Prices Respond to Better Demand

NEW YORK, Jan. 11.—Inquiries for wax both from foreign and domestic users were more numerous the past week which resulted in a larger volume of sales and also higher prices at New York and the Gulf. Fully refined waxes were in little demand with scale waxes getting the best play.

Generally speaking, suppliers reported a better tone in wax markets, applicable to all grades, even though the foreign inquiries bid low prices and activity in the fully refined grades was light. An influx of orders during the middle of the week led many of the trade to believe that foreign buyers actually had storage space which they wished to fill and that the inquiries were not merely "market feelers." Some took this as an indication of a still better market in the near future. A reduction of stocks and production in November also had a favorable influence on sentiment.

The foreign inquiries originated mostly in the Continent although a few came from South America.

An indication as to the probable trend of prices in the future was gathered from two reports of sales. A large eastern refiner sold 100 tons of white crude scale to a California buyer at a price slightly above 3.125 cents. An unconfirmed report was heard that some small sales had been made to dealers over January and February at 3.03 cents, f.o.b. New York harbor. These sales, however, were not believed by most of the trade to be representative of the market.

The eastern refiner said his shipments to foreign accounts and to his subsidiaries were taking about all of his plant's output since manufacturing operations had been reduced.

Several New York dealers were seeking white crude scale for shipment in the period between February and June. They were bidding 3 cents a pound. Refiners apparently were not interested in selling this low; many were asking 3.25 cents.

Refiners were reported to have taken a firmer position with regard to spot shipments, both in Pennsylvania and the Mid-Continent. Two or three Oklahoma shippers were said to be quoting 3.25 cents, f.o.b. plant, which would give a cost of at least 3.50 cents, laid down at the Gulf.

A New York buyer reported large concerns in the United Kingdom had been buying up a considerable portion of the Polish output, storing what they couldn't use, with a view to stabilizing foreign markets to some extent.

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Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	Jan. 13	Jan. 6	Dec. 30
New York harbor	8.75	8.75	8.75
Portland district	*10.75	*10.75	*10.75
Boston district	*10.25	*10.25	*10.25
Providence district	*10.25	*10.25	*10.25
Philadelphia district	8.75	8.75 – 9.00	8.75 – 9.00
Baltimore district	8.75	9.00	9.00
Norfolk district	9.00	9.00	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.00	9.00	9.00
Philadelphia district	8.75	9.00	9.00
Baltimore district	8.75	9.00	9.00
WATER WHITE KEROSENE			
New York harbor	7.75	7.75	7.75
Philadelphia district	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Baltimore district	7.75	7.75	7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL†			
New York Harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10

Note: Above gasoline prices do not include inspection tax levied in some states.
*Minimum delivered. †Lighterage 5c per bbl. additional.

New York Export Market

(Lubricating oils are per gal. in bbls.)

	Jan. 13	Jan. 6	Dec. 30
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	48.00 –51.00	49.00 –51.00	50.00 –53.00
600 D filtered	40.00 –42.00	41.50 –44.00	42.00 –44.00
600 Warren E filtered	36.00 –38.00	36.00 –38.00	36.00 –38.00
600 s.r. unfiltered	30.50 –32.00	30.50 –32.00	32.00 –34.00
650 s.r. unfiltered	37.00 –40.00	37.00 –40.00	37.00 –40.00
600 flash, s.r.	38.00 –40.00	39.00 –42.00	39.00 –42.00
630 flash, s.r.	42.50 –44.00	42.00 –44.00	42.00 –44.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00
200 vis. No. 6 color	16.00 –17.00	16.00 –17.00	16.00 –17.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	22.00 –24.00	22.00 –24.00	22.00 –24.00
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	28.00 –29.00	28.00 –29.00	28.00 –29.00
400 vis. No. 7¼ color	26.00 –27.00	26.00 –27.00	26.00 –27.00
300 vis. No. 6 color	23.00 –24.00	23.00 –24.00	23.00 –24.00
200 vis. No. 6 color	21.00 –22.00	21.00 –22.00	21.00 –22.00

Wax Markets

(Prices in cents per pound, A.S.T.M. tests)

NEW YORK (F.a.s. carload lots)	Jan. 13	Jan. 6	Dec. 30
124-126 Yellow crude scale	2.875– 3.00	2.875– 3.00	2.875– 3.00
122-124 White crude scale	3.125	3.00 – 3.125	3.00 – 3.125
124-126 White crude scale	3.125	3.00 – 3.125	3.00 – 3.125
123-125 Fully refined	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
125-127 Fully refined	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
128-130 Fully refined	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
130-132 Fully refined	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
133-135 Fully refined	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
135-137 Fully refined	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
NEW ORLEANS (F.a.s. carload lots)			
124-126 Yellow crude scale	2.875	2.875	2.875
122-124 White crude scale	3.00	3.00	3.00
124-126 White crude scale	3.00	3.00	3.00
123-125 Fully refined	3.875– 4.00	3.875– 4.00	3.875– 4.00
125-127 Fully refined	4.00	4.00	4.00
128-130 Fully refined	4.125	4.125	4.125
130-132 Fully refined	4.375	4.375	4.375
133-135 Fully refined	5.50	5.50	5.50

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	Jan. 13	Jan. 6	Dec. 30
U. S. Motor	8.50	8.50	8.50
60-62, 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.05	$2.05	$2.05
KEROSENE			
44 water white	8.00	8.00	8.00
41-43 prime white	7.00	7.00	7.00
Water white, cases (cargoes)	$1.85	$1.85	$1.85
Prime white, cases (cargoes)	$1.75	$1.75	$1.75
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	4.00	4.00	4.00
*30 plus translucent gas oil	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
Grade C bunker oil	$0.95	$0.95	$0.95
Grade C bunker oil, cargoes	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
*Less than ½ of 1% sulphur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid.	$0.70 –$0.75	$0.70 –$0.80	$0.70 –$0.80
Grade C bunker oil for bunkering purposes, taxes paid	$1.00	$0.95 –$1.00	$0.95 –$1.00
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0. Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
200 vis. No. 3 unfiltered pale	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
300 vis. No. 3 unfiltered pale	9.75 –10.00	9.75 –10.00	9.75 –10.00
500 vis. No. 3½ unfiltered pale	11.25 –11.50	11.25 –11.50	11.25 –11.50
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	16.25 –16.50	16.25 –16.50	16.25 –16.50
200 vis. No. 5-6 red oil	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
300 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	9.25 –10.00	9.25 –10.00	9.25 –10.00
750 vis. No. 5-6 red oil	11.00 –12.00	11.00 –12.00	11.00 –12.00
1200 vis. No. 5-6 red oil	15.00 –16.00	15.00 –16.00	15.00 –16.00

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	Jan. 13	Jan. 6	Dec. 30
U. S. Motor gasoline	7.00 – 7.125	7.00 – 7.125	7.25 – 7.50
41-43 w.w. kerosene	6.125– 6.375	6.125– 6.375	6.375– 6.50
*26-32 translucent gas oil	3.875– 4.125	3.875– 4.125	3.875– 4.125
*Less than ½ of 1% sulphur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Jan. 13	Jan. 6	Dec. 30
Gasoline, U. S. Motor, 53-55 Gravity	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
Gasoline, U. S. Motor-blends and special cuts	7.25 –10.00	7.25 –10.00	7.25 –10.00
Gas Oil, 30-34, per barrel	$0.85 –$1.00	$0.85 –$1.00	$0.85 –$1.00
Diesel Oil, 27 plus, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Bunker oil, 14-18, per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125, 150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Jan. 13 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	35	44–45
Gulf to U. K. or Continental ports*	22-23	30–32
North Atlantic to U. K. or Continental ports*	20-21	27/6–29/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.75-$0.80	$0.85–$0.90
Gulf to North Atlantic ports (not E. of N. Y.)**	27.5-29.5	32

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**Venezuela loading same rate. For Tampico 3c per bbl. additional.

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Boston	1516 Consolidated Gas Bldg.
Dallas	3339 Magnolia Bldg.
Atlanta	1050 Healey Bldg.
San Francisco	1060 Rialto Bldg.
Havana, Cuba	Apartado 2507

WIGGINS ROOFS Stop EVAPORATION LOSSES

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Jan. 13, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Newark, N. J.	13.5	2	15.5	17.5	12.5
Annapolis	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Cumberland, Md.	15	4	19	21	14
Washington, D. C.	13.7	2	15.7	17.7	12.7
Danville, Va.	14.8	5	19.8	21.8	13.8
Norfolk, Va.	13.3	5	18.3	20.3	11
Richmond, Va.	13.7	5	18.7	20.7	12.7
Roanoke, Va.	15	5	20	22	14
Petersburg, Va.	14.3	5	19.3	21.3	13.3
Charleston, W. Va.	14.5	4	18.5	20.5	13.5
Keyser, W. Va.	15.1	4	19.1	21.1	14.1
Parkersburg, W. Va.	13.2	4	17.2	19.2	12.2
Wheeling, W. Va.	14.4	4	18.4	20.4	13.4
Charlotte, N. Carolina.	15.3	5	20.3	22.3	14.3
Hickory, N. C.	15.8	5	20.8	22.8	14.8
Mt. Airy, N. C.	15.5	5	20.5	22.5	14.5
Salisbury, N. C.	15.7	5	20.7	22.7	14.7
Charleston, S. C.	13.3	6	19.3	21.3	12.3
Columbia, S. C.	15.2	6	21.2	23.3	14.2

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	14	4	18	21	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16.5	4	20.5	23.5	15.5
Butte, Mont.	20.5	5	25.5	28.5	20
Helena, Mont.	20.5	5	25.5	28.5	20
Salt Lake City, Utah.	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	27.5	19
Albuquerque, N. M.	15	5	20	22	17

S. O. CALIFORNIA

Phoenix, Ariz.	15.5	4	19.5	23.5	20
Los Angeles, Cal.	16.5	3	19.5	22.5	15.5
Fresno, Cal.	17	3	20	23	17
San Francisco, Cal.	17	3	20	23	15.5
Reno, Nev.	21	4	25	28	19
Portland, Ore.	17.5	4	21.5	24.5	16.5
Seattle, Wash.	17.5	3	20.5	23.5	16.5
Spokane, Wash.	21.5	3	24.5	27.5	20.5
Tacoma, Wash.	17.5	3	20.5	23.5	16.5

Note: 4c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	20	13
Alexandria, La.	‡13	4	‡17	19	†14
Baton Rouge, La.	12	4	16	18	†14
Lake Charles, La.	††14	4	††18	††20	†14
New Orleans, La.	*11	4	*15	15	†13
Shreveport, La.	12	4	16	18	†14
Lafayette, La.	**14	4	**18	**20	†14
Bristol, Tenn.	14	5	19	20	14
Chattanooga, Tenn.	15	5	20	22	13
Knoxville, Tenn.	15	5	20	20	16
Nashville, Tenn.	14	5	19	19	16
Memphis, Tenn.	13	5	18	20	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

‡Alexandria gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	21	15.5
Catlettsburg, Ky.	15	5	20	21	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	16	5	21	23	13
Covington, Ky.	14	5	19	20	15.5
Clarksdale, Miss.	13	5	18	20	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	14	5	19	21	13
Natchez, Miss.	15.5	5	20.5	20.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	13	4	17	19	13
Mobile, Ala.‡	14	4	18	20	15
Montgomery, Ala.*	15	4	19	21	16.5
Atlanta, Ga.	14	6	20	22	†16.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	15	6	21	23	†16.5
Savannah, Ga.	16	6	22	24	†15.5
Jacksonville, Fla.	16	6	22	24	14.5
Miami, Fla.	17	6	23	25	15.5
Tampa, Fla.	14	6	20	22	14.5†

†territory.

Latest Changes in Tank Wagon Prices

Gasoline Changes

S. O. New Jersey—The 2c discount to dealers is figured off tank wagon price instead of off service station price, as reported on page 108 of the Jan. 8 issue of NATIONAL PETROLEUM NEWS.

Atlantic Refining—T.w. and s.s. prices of gasolene were revised to conform with prices posted by S. O. New Jersey, **Jan. 6.** This revision affects New Jersey, Maryland, Virginia and North Carolina where both the Atlantic and Standard of New Jersey market.

S. O. Louisiana—T.w. and s.s. cut 2c, Alexandria, to 17c and 19c; also cut 2c, Lake Charles, to 18.5c and 20.5c, **Jan. 7.**

T.w. and s.s. cut ½c, Lake Charles, to 18c and 20c, **Jan. 8.**

T.w. and s.s. cut 2c, Lafayette, to 18c and 20c, **Jan. 8.**

S.s. only cut 2c, Knoxville, to 20c, same as tank wagon, **Jan. 8.**

S. O. Indiana—T.w. up 3c and s.s. 4c, E. St Louis, to normal price of 18.4c and 19.4c, including 3c tax, **Jan. 8.**

Magnolia Petroleum—T.w. and s.s. cut 2c, Muskogee, to 13c and 15c **Jan. 9.**

T.w. and s.s. cut 2c, Oklahoma City, to 15c and 18c, **Jan. 9.**

S. O. Kentucky—T.w. and s.s. gasoline advanced 2c, Augusta, to 20c and 22c respectively, **Jan. 11.**

Kerosene Changes

S. O. New Jersey—Kerosene price at Keyser, W. Va. was 14.1c t.w., effective **Jan. 6**, instead of 13.1c as published on page 108 of Jan. 8 issue.

Atlantic Refining—T.w. price of kerosene was revised to conform with prices posted by S. O. New Jersey, **Jan. 6.**

S. O. Louisiana—Kerosene cut 2c, Alexandria and Lake Charles, to 14c t.w., **Jan. 6.**

Kerosene cut 1c, Shreveport, to 14c t.w., **Jan. 7.**

Kerosene cut ½c, Baton Rouge, to 14c t.w., **Jan. 8.**

Magnolia Petroleum—Kerosene cut 2c, El Paso, to 14c t.w., **Jan. 6.**

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Pensacola, Fla.**	12	6	18	20	14.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. NEBRASKA

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Omaha, Neb.	16.25	4	20.25	22.25	13.25
McCook	17.75	4	21.75	23.75	14.75
Norfolk	16.75	4	20.75	22.75	13.75
North Platte	17.75	4	21.75	23.75	14.50
Scottsbluff	17.75	4	21.75	23.75	14.25

S. O. INDIANA

Chicago, Ill.	14	3	17	18	13
Decatur, Ill.	16.2	3	19.2	20.2	13.1
E. St. Louis, Ill.	15.4	3	18.4	19.4	12.2
Joliet, Ill.	16.4	3	19.4	20.4	13.3
Peoria, Ill.	16.2	3	19.2	20.2	13.1
Quincy, Ill.	16.2	3	19.2	20.2	12.9
Indianapolis, Ind.	16.2	4	20.2	21.2	14.2
Evansville, Ind.	16	4	20	21	14
South Bend, Ind.	16.4	4	20.4	21.4	14.4
Detroit, Mich.	16.8	3	19.8	20.8	14.7
Grand Rapids, Mich.	16.7	3	19.7	20.7	14.6
Saginaw, Mich.	16.9	3	19.9	20.9	14.8
Green Bay, Wisc.	16.6	2	18.6	19.6	13.4
Madison, Wisc.	16.3	2	18.3	19.3	13.1
Milwaukee, Wisc.	16.1	2	18.1	19.1	12.9
La Cross, Wisc.	17.2	2	19.2	20.2	14
Minneapolis, Minn.	17.2	3	20.2	21.2	13.9
Duluth, Minn.	17.5	3	20.5	21.5	13.9
Mankato, Minn.	17.1	3	20.1	21.1	13.7
Des Moines, Ia.	16.5	3	19.5	20.5	13.3
Davenport, Ia.	16.5	3	19.5	20.5	13.3
Sioux City, Ia.	16.1	3	19.1	20.1	12.9
Mason City, Ia.	16.5	3	19.5	20.5	13.3
St. Louis, Mo.	*15.9	2	17.9	18.9	12.3
Kansas City, Mo.	†16.9	2	18.9	19.9	11.6
St. Joseph, Mo.	†16.5	2	18.5	19.5	12.2
Fargo, N. D.	18.9	3	21.9	22.9	15.9
Grand Forks, N. D.	19.2	3	22.2	23.2	16.2
Minot, N. D.	18.9	3	21.9	22.9	15.9
Pierre, S. D.	17	4	21	22	14.4
Huron, S. D.	17.3	4	21.3	22.3	14.7
Wichita, Kans.	14.8	3	17.8	18.8	11.8
Bartlesville, Okla.	14.5	4	18.5	19.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply. Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide	14	4	18	19	12
Columbiana, Mercer, Allen, Darke and Hancock Counties:	13	4	17	17	12

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions. In counties where prices are below normal, discount is 3c per gal. off t.w. price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	9	4	13	15	10
Oklahoma City	11	4	15	18	10
Tulsa, Okla.	11	4	15	19	10
Fort Smith, Ark.†	11	†4	15	17	12
Little Rock, Ark.	13	5	18	20	13
Texarkana, Ark.*	13	*4	17	19	12
Dallas, Tex.	13	4	17	21	12
Fort Worth, Tex.	13	4	17	20	12
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	12	4	16	20	14

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*Greater New York City:

Boroughs of Manhattan, Bronx, Queens & Kings	14	2	16	18	15

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Georgia, 1/10c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa, 7/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above state or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect Jan. 13, 1930

S. O. NEW YORK

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
*Borough of Richmond	15	2	17	19	15
Albany, N. Y.	16	2	18	20	15
Buffalo, N. Y.	14	2	16	18	14
Rochester, N. Y.	14	2	16	18	13
Syracuse, N. Y.	16	2	18	20	15
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	20	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	15

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	15	*	15	21	13
Philadelphia, Pa.	15	*	15	21	13
Allentown, Pa.	15	*	15	21	13
Erie, Pa.	15	*	15	19	13
Scranton, Pa.	15	*	15	21	13
Altoona, Pa.	15	*	15	21	13
Williamsport, Pa.	14	*	14	18	13
Dover, Del.	15	3	18	20	13
Wilmington, Del.	15	3	18	20	13
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	14	2	16	18	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	14	2	16	18	13
Providence, R. I.	16	2	18	20	13
Hartford, Conn.	16	2	18	20	15
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Camden, N. J.	13.6	2	15.6	17.6	12.6
Trenton, N. J.	14	2	16	18	13
Annapolis, Md.	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Hagerstown, Md.	14.7	4	18.7	20.7	13.7
Richmond, Va.	13.7	5	18.7	20.7	12.7
Wilmington, N.C.	13.4	5	18.4	20.4	12.4
Brunswick, Ga.	16	6	22	24	**16.5
Jacksonville, Fla.	16	6	22	24	14.5

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	11.50–12.00
Philadelphia district	11.50–12.00

Tank Wagon or Steel Barrels

New York City	16–18
New England	18–19
New Jersey	16–18
Pennsylvania	16–19

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
Cochrane	24.5	5	29.5	..	25.5
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5

(*Continued on Page 108*)

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Gulf Refining Company

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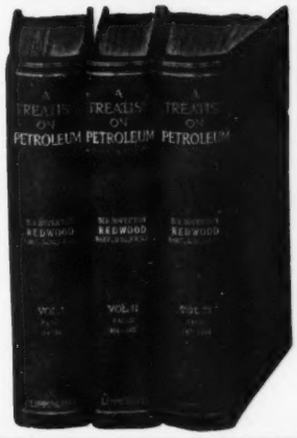

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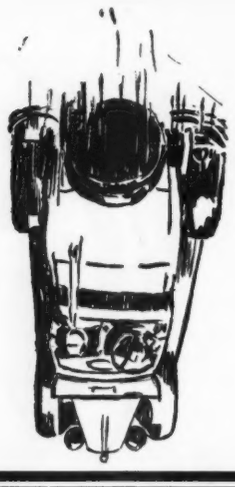

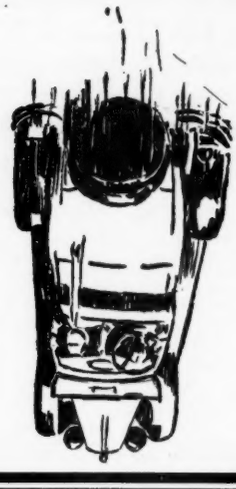

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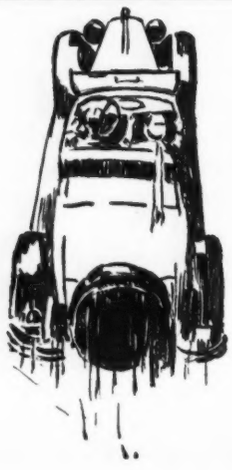

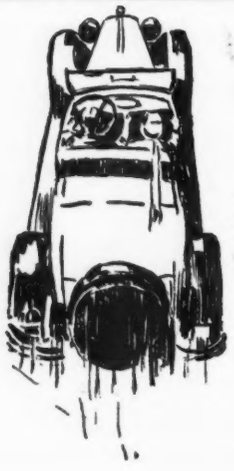

Crude Oil Prices (in Effect Jan. 13, 1930)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(All Penna. Crude prices effective Oct. 1, 1929)

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District) *$3.05
Bradford District Oil in National Transit Lines (Bradford District) *3.05
Penna. Grade Oil in National Transit Lines (Other Pennsylvania) *3.05
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) 3.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 2.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) 2.70
Wayne district crude in Cumberland lines (West Virginia) 1.42
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Dec. 6, 1929) 1.80
Corning, O., heavy grade (Effective Dec. 6, 1929) 1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Nov. 12, 1929) 1.55
Somerset Oil in Eureka Pipe Lines (Effective Nov. 12, 1929) 1.29
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929) $0.60

***Oil run prior to July 1, 1929 is $3.00 per bbl.**

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Oct. 7, 1929) $1.70

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon):

32-32.9	$1.25	39-39.9	$1.60
33-33.9	1.30	40-40.9	1.65
34-34.9	1.35	41-41.9	1.70
35-35.9	1.40	42-42.9	1.75
36-36.9	1.45	43-43.9	1.80
37-37.9	1.50	44 and above	1.85
38-38.9	1.55		

(Posted by Pure Oil Co.)

Midland, Midland County $1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective May 21, 1929

Wooster	$1.90	Princeton	$1.75
Lima	1.80	Illinois	1.75
Waterloo	1.20	Plymouth	1.28
Indiana	1.57	West Kentucky	1.68

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia $2.20
Oil Springs 2.27

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective May 20, 1929

Below 25	$0.85	35-35.9	$1.40
25-25.9	0.90	36-36.9	1.45
26-26.9	0.95	37-37.9	1.50
27-27.9	1.00	38-38.9	1.55
28-28.9	1.05	39-39.9	1.60
29-29.9	1.10	40-40.9	1.65
30-30.9	1.15	41-41.9	1.70
31-31.9	1.20	42-42.9	1.75
32-32.9	1.25	43-43.9	1.80
33-33.9	1.30	44 and above	1.85
34-34.9	1.35		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

May 20, 1929, same schedule as Prairie in above fields.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

May 20, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.70	29-29.9	$0.95
26-26.9	0.75	30-30.9	1.05
27-27.9	0.85	31-31.9	1.15
28-28.9	0.90		

May 20, 1929, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in West Texas which see.

Iatan district $0.93
Corsicana heavy 0.80
Luling 0.90
Mirando 0.90
Darst Creek, 60° F. gravity 1.25

Carter Oil Co.

(Oklahoma and Kansas)

May 20, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Hutchinson and Carson Counties:

Below 32	$0.90	38-38.9	$1.25
32-32.9	0.95	39-39.9	1.30
33-33.9	1.00	40-40.9	1.35
34-34.9	1.05	41-41.9	1.40
35-35.9	1.10	42-42.9	1.45
36-36.9	1.15	43-43.9	1.50
37-37.9	1.20	44 and above	1.55

Wheeler County:

Below 30	$0.90	37-37.9	$1.30
30-30.9	0.95	38-38.9	1.35
31-31.9	1.00	39-39.9	1.40
32-32.9	1.05	40-40.9	1.45
33-33.9	1.10	41-41.9	1.50
34-34.9	1.15	42-42.9	1.55
35-35.9	1.20	43-43.9	1.60
36-36.9	1.25	44 and above	1.65

Gray County:

Below 29	$0.90	37-37.9	$1.35
29-29.9	0.95	38-38.9	1.40
30-30.9	1.00	39-39.9	1.45
31-31.9	1.05	40-40.9	1.50
32-32.9	1.10	41-41.9	1.55
33-33.9	1.15	42-42.9	1.60
34-34.9	1.20	43-43.9	1.65
35-35.9	1.25	44 and above	1.70
36-36.9	1.30		

Above prices met by The Texas Co. and Magnolia on May 20.

WEST TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Winkler, Crane, Upton, Crockett, and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.70	31-31.9	$0.98
25-25.9	0.74	32-32.9	1.02
26-26.9	0.78	33-33.9	1.06
27-27.9	0.82	34-34.9	1.10
28-28.9	0.86	35-35.9	1.14
29-29.9	0.90	36 and above	1.18
30-30.9	0.94		

Howard and Glasscock counties:

Effective Nov. 27, 1929

Below 25	$0.70	31-31.9	$0.90
25-25.9	0.74	32-32.9	0.92
26-26.9	0.78	33-33.9	0.94
27-27.9	0.82	34-34.9	0.96
28-28.9	0.84	35-35.9	0.98
29-29.9	0.86	36 and above	1.00
30-30.9	0.88		

May 20, 1929, The Texas Co. posted same prices as Humble in Crane, Upton, Pecos and Winkler, and Magnolia in Crane, Upton, Winkler, Glasscock, Howard and Mitchell.

SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective May 20, 1929

Mirando $0.90
Salt Flat 1.25

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective May 22, 1929

Below 28	$1.00	36-36.9	$1.45
28-28.9	1.05	37-37.9	1.50
29-29.9	1.10	38-38.9	1.55
30-30.9	1.15	39-39.9	1.60
31-31.9	1.20	40-40.9	1.65
32-32.9	1.25	41-41.9	1.70
33-33.9	1.30	42-42.9	1.75
34-34.9	1.35	43-43.9	1.80
35-35.9	1.40	44 and above	1.85

**Cotton Valley, below 36, $0.85. Beginning with 36-36.9, same schedule as above.

Smackover, below 24 ..... $0.85
do 24 and above 1.00
Bellevue 1.30
*Urania, La. 1.10
†East El Dorado 0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

May 20, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.85; 25-25.9, $0.90; 26-26.9, $0.95; 27-27.9, $1.00

May 22, Magnolia, Atlantic, Shreveport-El Dorado Pipe Line, Louisiana Oil, and Gulf Companies met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective May 22, 1929

Below 28	$0.90	30-30.9	$1.02
28-28.9	0.94	31-31.9	1.06
29-29.9	0.98	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective May 20, 1929

Grades A	$1.30	29-29.9	$1.30
Grades B:		30-30.9	1.33
Below 25	$1.15	31-31.9	1.36
25-25.9	1.18	32-32.9	1.39
26-26.9	1.21	33-33.9	1.42
27-27.9	1.24	34-34.9	1.45
28-28.9	1.27	35 and above	1.48

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

F. L. Miller Joins Stevens Staff

TULSA, Jan. 11.—F. L. Miller, vice president and treasurer of the former Miller Petroleum Co. has become connected with the A. J. Stevens Grease & Oil Co. of Kansas City, succeeding O. B. Ward, who recently resigned to return to his former connection.

Mr. Miller has been in the petroleum industry since 1904. He operated a group of bulk stations in western Oklahoma, with headquarters at Clinton. Later he established a number of stations in Kansas, and in 1912 became affiliated with the former Sunflower Refining Co. He became associated with J. H. Miller and L. L. Marcell and others in the formation of the White Eagle Oil & Refining Co. in 1917, being that company's first secretary and sales manager. In 1920 he became affiliated with the Miller Petroleum Co. and remained with that concern throughout its life.

Carolina Court Upholds Chain Store Tax

CLEVELAND, Jan. 11.—A county court at Raleigh, N. C., has held constitutional the North Carolina law which imposes an annual tax of $50 a store on all chain stores. The law was contested by the Great Atlantic & Pacific Tea Co. and other operators of chain stores.

The court held that chain stores had economic advantages over the unit or individual stores and therefore they were not being denied rights enjoyed by the individually owned stores.

The tax on the chain stores was assessed under Section 162 of the North Carolina Revenue Laws of 1929 but did not apply to oil company stations which already were being taxed under Section 153 of the revenue laws. Section 153 has been in force several years.

Gulf Lubes Demand Slack

HOUSTON, Jan. 13.—Slack in the Gulf Coastal lubricant markets, apparent since the holidays, had not been taken up at the end of the week. Under-the-list prices at which certain sales had been made, continued to weaken the entire domestic selling structure, or, at least, to prevent speedy recovery.

Ready January 15

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These vital statistics on production and stocks of crude and refined products are invaluable to the oil industry as a means of comparison, and have been added to the 1929 price volume at the request of many oil men.

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Crude Oil Prices (in Effect Jan. 13, 1930)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective May 20, 1929

Grades A	$1.30	*Grades B	$1.15
‡Grades B (light crude)			
35–35.9	$1.49	40–40.9	$1.69
36–36.9	1.53	41–41.9	1.73
37–37.9	1.57	42–42.9	1.77
38–38.9	1.61	43–43.9	1.81
39–39.9	1.65	44 and above	1.85

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective May 20, 1929)

‡Salt Creek 29–29.9	$1.10
" " 30–30.9	1.15
" " 31–31.9	1.20
" " 32–32.9	1.25
" " 33–33.9	1.30
" " 34–34.9	1.35
" " 35–35.9	1.40
" " 36–36.9	1.45
" " 37 and above	1.50
Elk Basin	1.65
Grass Creek light	1.65
Big Muddy	$1.43
Lance Creek	1.68
Rock Creek	1.40
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.65
‡Cat Creek, Mont.	1.65
Sunburst, Mont.	1.75
‡Hogback, N. Mex.	1.70
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Alamitos Heights Huntington Beach Signal Hill Seal Beach	Inglewood Torrance	Olinda-Brea Canon †Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14–14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15–15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16–16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17–17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18–18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19–19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20–20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21–21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22–22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23–23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24–24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25–25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26–26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27–27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28–28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29–29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.1
30–30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.1
31–31.9	1.30	....	1.30	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.2
32–32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33–33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	1.40	1.22	....	....	....	....	1.34
34–34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35–35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	1.52	1.30	....	....	....	....	....
36–36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37–37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38–38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39–39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40–40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Richfield posted only to 30-30.9 at $1.25.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Jan. 13	Jan. 6
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$1.00–1.05	$1.00–1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10–4.00	$3.10–4.00
Liquid Chlorine, tank cars, wks., lb.	3.50–5.00	3.50–5.00

Compounders' Supplies

	Jan. 13	Jan. 6
Vegetable Oils		
Linseed carloads, spot, lb.	14.60	14.60
Tanks, spot	13.80	13.80
Soya Bean, Tank, coast, lb.	9.50	9.50
Oleic Acid		
Distilled, tanks, lb.	9.25	9.75
Distilled, bbls., lb.	10.125	10.625
Saponified, tanks, lb.	9.25	9.75
Saponified, bbls., lb.	10.125	10.625
Lard Oils		
Prime Winter Strained, lb.	15.25	15.25
Extra Winter Strained, lb.	12.75	12.75
Extra, lb.	12.50	12.50
Extra No. 1, lb.	12.00	12.00
No. 1, lb.	11.75	11.75
No. 2, lb.	11.50	11.50
Tallow oil, lb.	11.00	11.00
Neatsfoot Oil		
Pure, bbls., lb.	14.50	14.50
Extra, bbls., lb.	12.25	12.25
No. 1 bbls., lb.	12.00	12.00
Cold Pressed, lb.	12.50	12.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	65	70
Light Pressed, tank cars, N. Y., gal.	58–60	58–60
White bleached, gal.	71	78
Yellow bleached, gal.	68	71
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	51	50
Steam distilled turpentine, Savannah, gal.	46	45
Gum turpentine, N. Y., gal.	57	55
Gum turpentine, f.o.b. cars Savannah, gal.	50.50	47.50
Wood Rosin, N.Y., gal.	$7.50	$7.30
Wood Rosin F, Savn'h, bbl.	$6.70	$6.50
Gum Rosin B, N. Y., bbl.	$8.80	$8.40
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.20	$6.75
Rosin oil, pure, gal.	60	59
Rosin oil, compounded, gal.	60	60
Pine Tar		
Kiln burnt, bbl.	$11.00–13.00	$13.00–14.00
Retort, bbl.	$14.00–15.00	$13.50–14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	59–66	59–66

Four Oil Stocks Enhance in Price On New York Exchange in 1929

CLEVELAND, Jan. 13

ONLY four common oil stocks and one oil transportation stock rose in market price in 1929. These stocks were the Standard Oil Co. (N. J.), Simms Petroleum Co., the two issues of the Pan American Petroleum & Transport Co. (Standard of Indiana), and the Union Tank Car Co.

On the down side of the market, the summary of the 1929 transactions in oil or affiliated stocks on the New York Stock Exchange shows, were declines up to 47½ points with the declines of the more active issues running 10 to 20 points.

Standard Oil Co. (N. J.) was the most active stock among the oil shares on the New York Exchange, transactions exceeding 14,000,000 shares. Sinclair Consolidated Oil Corp. was second with transactions exceeding 11,000,000 shares. The third on the list of activity is the Transcontinental Oil Co. and fourth is the Atlantic Refining Co. with sales amounting to more than 7,000,000 for each company.

In the case of many of the companies whose market values fell most they reached their highest prices early in the year. Most of them touched their low marks in late October or the first half of November when the market was under heavy selling pressure.

The Standard of New Jersey was at its low point in February and reached its year's peak in September. Although it was severely attacked in the break of late October it did not quite reach its February low. The Pan American issues also were at their lows in February and reached their peaks in July for the common stock and August for the B stock. Simms reached its peak in August and its low Nov. 13, the day when average stock prices of all classes were at the low point for the crash.

The accompanying table gives the volume of trading in the oil and affiliated stocks on the New York Exchange, the high and low prices for 1929 with the dates those points were reached, the price of the last sale in 1929, and the change from the last sale in 1928.

Stock	Sales	High	Date	Low	Date	Last	Change
Amerada Corp	717,600	42⅝	Jan. 3	17½	Oct. 29	21	—18
American Republics	339,300	64¾	Jan. 2	12½	Nov. 12	22⅛	—40⅞
Associated Oil	10,370	47¼	Apr. 5	34½	Dec. 24	34½	— 9¼
Atlantic Refining	7,229,734	77⅞	July 8	30	Oct. 29	38	—28
Barnsdall Corp. A	4,484,700	49⅞	May 10	20	Oct. 29	23¾	—18⅜
do B	5,600	49	Feb. 2	38	Feb. 16	43⅛	....
Beacon Oil	1,197,300	32⅞	July 17	12½	Dec. 30	14¼	— 6⅜
California Petroleum	1,300	34½	Aug. 28	25	June 17	28	....
Continental Oil	3,202,900	47⅛	Jan. 3	18	Nov. 13	23⅜	—18⅜
General Asphalt	829,400	94⅜	Aug. 17	42¼	Nov. 13	49¾	—24⅞
do pfd	44,500	140	Feb. 5	103¼	Mar 16	103¼	—103¼
Houston Oil	965,600	109	Apr. 2	26	Oct. 29	57	—41½
Independent Oil & Gas	1,439,400	39⅜	May 7	17¾	Oct. 29	22¼	—12⅜
Indian Refining	3,940,900	53	Aug. 17	13⅛	Oct. 29	18⅜	—11½
do ctfs	1,757,400	51¼	Aug. 17	11½	Oct. 29	16¼	—11¾
do pfd	200	165	Jan. 11	160	Jan. 2	165	....
Lago Oil & Transport	282,300	38⅜	June 17	16½	Nov. 12	21¼	— 9¾
Louisiana Oil Refg	1,098,400	18	Jan. 9	7	Oct. 29	8¾	— 5⅜
do pfd	4,940	100¼	Feb. 21	80	Nov. 14	82	— 9
Maracaibo Oil	120,600	18½	Apr. 18	5⅛	Dec. 26	5½	—10⅝
Mexican Petroleum	580	295	Apr. 22	176	Nov. 11	180	—84
do pfd	20	105	Apr 29	162	Oct. 29	102	0
Mexican Seaboard	3,770,825	69⅜	Jan. 3	9¼	Oct. 24	18½	—47½
Mid-Continent Petrol	1,425,400	39⅞	Jan. 3	22⅛	Nov. 14	27¼	—10½
do pfd	18,000	121	Jan. 4	120¼	Jan. 18	120½	....
Middle States Oil	677,000	5⅛	Jan. 23	1	Oct. 24	1⅝	— 2⅞
do ctfs	256,800	6½	Aug. 1	¾	Nov. 12	1	....
Pacific Oil	585,500	1½	Jan. 10	⅝	Oct. 30	1	—¼
Pan American Petrol	375,100	69	July 28	40¼	Feb. 18	58	+11¼
do B	6,276,800	69¼	Aug. 28	40½	Feb. 18	59⅝	+10⅜
Pan American Western	16,420	17½	Jan. 3	12⅞	Oct. 9	12⅞	— 3¾
Panhandle P. & R	114,200	15¼	Jan. 3	3	Nov. 7	45⅝	— 7⅜
do pfd	7,600	76	Jan. 16	47½	Feb. 25	50	—30
Phillips Petroleum	1,436,600	47	Jan. 3	24¼	Nov. 13	35	—10
Pierce Oil Corp	392,400	3⅜	Mar. 18	1	Oct. 29	1	— 1½
do pfd	137,000	51¾	Sept. 30	20	Oct. 31	20	— 8⅝
Pierce Petroleum	471,700	5⅝	Jan. 15	½	Oct. 29	2⅜	— 3
Prairie Oil & Gas	926,600	65⅝	Jan. 2	40½	Oct. 30	51½	—13
Prairie Pipe Line	828,800	65	Aug. 23	45	Oct. 29	59⅜	....
Producers & Refiners	158,500	25⅞	Jan. 3	4	Oct. 25	8⅞	—14
do pfd	11,580	46¾	Mar. 21	25½	Nov. 13	32¾	—10¼
Pure Oil Co	1,066,600	30¾	May 9	20	Nov. 13	24¼	— 2¾
do 8% pfd	15,500	115½	Jan. 21	108	Nov. 8	113	— 1⅝
Richfield Oil	1,293,300	49⅝	Jan. 3	20	Oct. 24	25	—22½
Rio Grande Oil	2,043,800	42½	Mar. 28	15	Oct. 24	19	....
Royal Dutch	2,176,000	64	Sept. 16	43⅛	Oct. 29	52¾	— 1⅜
Shell Trading	7,210	55¾	Jan. 10	43⅜	July 26	45	—11¼
Shell Union Oil	2,228,900	31¾	Apr. 2	19	Oct. 29	23⅜	— 4⅜
Simms Petroleum	3,327,800	40⅛	Aug. 17	15	Nov. 13	25¾	+ 2
Sinclair Consolidated	11,153,300	45	Jan. 2	21	Nov. 13	24⅜	—17¾
do pfd	25,100	111	Mn. 39	103	Oct. 30	109⅝	0
Skelly Oil	2,043,800	46½	Jaay 6	28	Oct. 29	31⅞	— 3⅜
S. O. California	3,619,900	81⅞	May 6	51½	Oct. 29	61⅛	—10⅞
S. O. New Jersey	14,329,700	83	Sept. 16	48	Feb. 16	66⅛	+11⅛
S. O. New York	7,210,900	48⅛	Sept. 12	31¾	Nov. 13	33⅜	—12⅛
Sun Oil	979,300	86⅜	Oct. 16	55	Dec. 21	56½	— 8¾
do pfd	8,460	105½	Jan. 8	100	Jan. 3	104⅞	+⅞
Superior Oil	388,300	24	Aug. 20	5¼	Nov. 13	6¼	0
The Texas Corp	4,753,900	71⅞	Sept. 12	50	Nov. 13	56⅛	—10⅞
Texas Pacific C. & O	1,059,500	23⅞	Mar. 21	9½	Nov. 13	10	— 8⅜
Tide Water Oil	141,600	40	June 7	14	Nov. 13	20	—17
do pfd	42,000	97½	Jan. 17	85⅛	Nov. 14	87½	— 8½
Tide Water Associated	2,786,600	23½	June 17	10	Nov. 13	11⅞	— 9¼
do pfd	79,900	90⅞	Aug. 2	74⅛	Nov. 14	85	— 5
Transcontinental Oil	7,602,800	15¼	Aug. 28	5⅛	Oct. 29	8½	— 3¾
Union of California	831,200	57	Sept. 30	42⅛	Nov. 13	45¾	— 4¾
Union Tank Car Co	80,600	163¾	Sept. 11	121⅞	Jan. 15	148	+26
Warner Quinlan Co	802,300	42⅞	Jan. 2	15	Oct. 24	20¼	—19⅝
White Eagle Oil & Ref	351,800	38	Feb. 25	25	Oct. 29	27¼	— 8⅜
W. F. Wilcox Oil & Gas	520,500	29¾	Feb. 6	12⅞	Nov. 4	14⅛	— 4⅞

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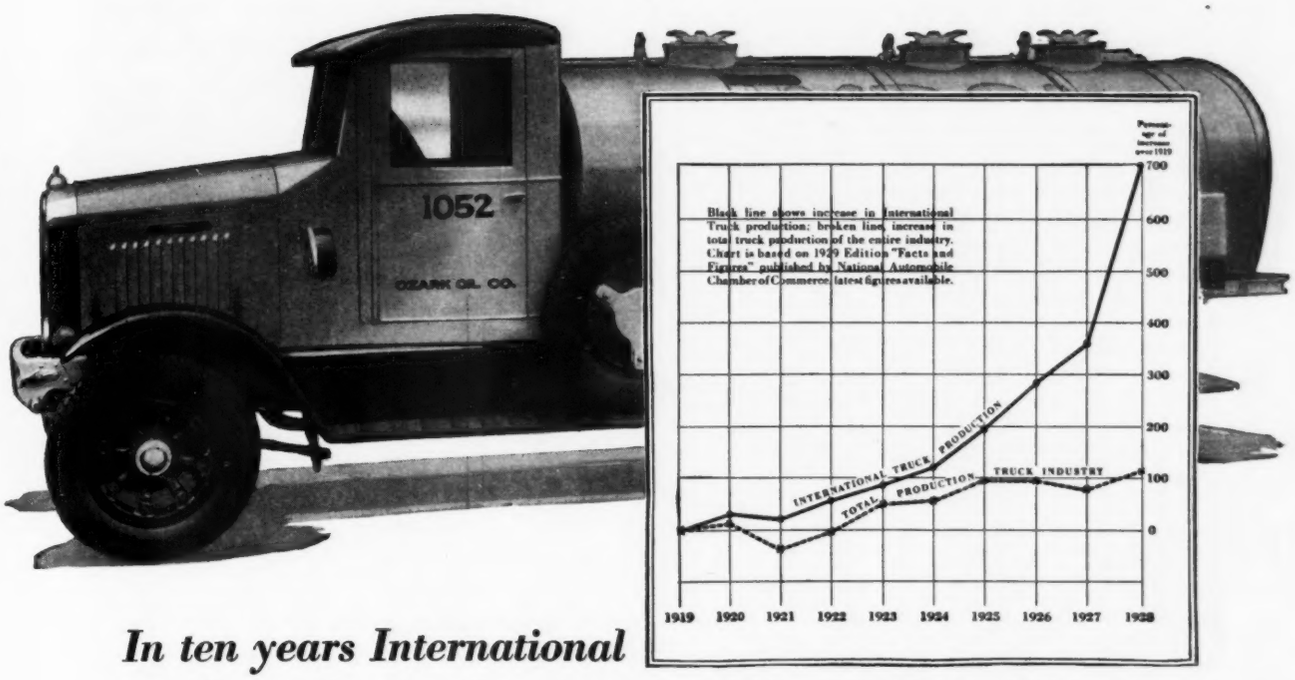
Fast-Growing Popularity



In ten years International Truck production has increased Seven-Fold, while the total truck production of the industry has only doubled.

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INTERNATIONAL

INTERNATIONAL TRUCKS

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Jan. 11 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	17½	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 29	4,200	20¾	22	20¾	21	+ ⅛
85	51¼	64¾	12½	(sh) 209,180	N.P.	American Republics Corp.	....	.....	1,600	24	24⅞	23	24	+ 1⅜
53⅜	37½	47¼	35	$56,000,000	$25	Associated Oil	50cQ	Dec. 31, 29	100	37⅛	37¼	37	37⅛	+ ⅛
62½	50	77⅞	30	50,000,000	25	Atlantic Refining	‡25cQ	Dec. 16, 29	11,400	38⅜	39	37⅝	38⅝	+ 1
53	20	49⅛	20	47,261,125	25	Barnsdall Corp. A	50cQ	Nov. 7, 29	8,900	23⅜	23⅞	23⅛	23½	+ ⅛
51⅛	20	49	38¼	300,525	25	do B	50cQ	Nov. 7, 29	.....	.....	.....	.....	.....	.....
24½	12¼	32⅞	13¼	(sh) 956,075	N.P.	Beacon Oil	....	.....	1,900	15	15¾	15	15½	+ ½
36	25¼	34½	25	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
.....	.....	37¾	18	(sh) 4,634,163	N.P.	Continental Oil (Delaware)	.....	.....	36,200	23½	23½	22	22½	— ½
94⅛	68	94¾	42¼	21,031,400	100	General Asphalt	$1Q	Dec. 16, 29	3,000	50	51½	49⅛	50¼	— ¼
141	110⅛	138	103½	6,628,200	100	do pfd	$1.25Q	Dec. 2, 29	.....	.....	.....	.....	.....	.....
67	79	109	23	25,000,000	100	Houston Oil	.....	.....	23,600	54½	58⅞	53¼	55	— ⅜
38⅜	21⅜	39¼	17¾	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Oct. 31, 29	5,300	23	23½	22¾	23⅜	+ ⅜
39⅝	9	53	13	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	25,200	18½	20¾	17¾	19	— 1
37¼	8⅛	51¼	11½	4,550,110	10	do ctfs	.....	.....	10,400	16⅜	19¼	16	18	+ 1⅞
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Oct. 1, 29	.....	.....	.....	.....	.....	.....
39⅛	27⅜	38⅜	16½	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	200	21¼	21¼	21¼	21¼	0
119¾	9⅜	18	7	(sh) 1,187,298	N.P.	Louisiana Oil Refining	.....	.....	2,300	9½	9½	9	9½	0
96	78	100¼	80	$4,000,000	$100	do pfd	$1.62½	Nov. 15, 29	20	84	88	84	88	0
25½	12½	18½	7½	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	.....	.....	.....	.....	.....	.....
360	250	295	176	$45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
73	4⅝	69⅛	9¼	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	27,800	17⅞	18⅞	17⅛	17⅜	— ⅛
44½	25⅛	39⅞	22⅛	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	Nov. 15, 29	11,200	27¾	28	26¼	27	0
120½	103¼	121	120¾	$6,718,000	$100	do pfd	$1.75Q	Dec. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	¾	23,849,720	10	Middle States	....	July 1, 23	.....	.....	.....	.....	.....	.....
5⅞	1½	3⅜	⅞	5,950,500	10	do ctfs	....	.....	2,200	1⅛	1⅛	1	1⅛	0
2¼	1	1½	⅝	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	17,400	1	1⅛	1	1⅛	+ ⅛
55½	38¼	69	40¾	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	300	59¾	59¾	57⅛	57⅛	— 2⅞
58⅞	37¾	69¼	40½	121,101,400	50	do B	....	Oct. 20, 27	3,500	59½	60¼	58	58⅛	— 1⅞
28⅜	15½	17½	13½	(sh) 400,000	N.P.	Pan. American Western B.	....	Jan. 30, 27	.....	.....	.....	.....	.....	.....
21⅜	11½	15¼	3	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	100	5⅛	5⅛	5⅛	5⅛	+ ½
106¼	70	76	47½	$2,935,200	$100	do pfd	....	July 2, 23	.....	.....	.....	.....	.....	.....
53⅞	35¼	47	24¼	(sh) 2,406,803	N.P.	Phillips Petroleum	‡50Q	Jan. 2, 30	7,700	34¾	35	33⅛	34	— 1
5¼	½	3⅜	1	$29,622,925	$25	Pierce Oil Corp.	....	.....	1,400	1	1¼	1	1⅛	+ ⅛
50	16¼	51½	20	15,000,000	100	do pfd	....	Feb. 1, 22	100	20½	20½	20½	20½	— ¼
6⅝	3½	5⅞	½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	3,900	2½	3	2½	2⅞	+ ⅜
64⅝	59½	65⅝	40½	$60,636,450	$25	Prairie Oil & Gas	‡50cQ	Dec. 31, 29	6,400	52	52	50⅝	51¼	— ¾
.....	.....	65	45	101,250,000	25	Prairie Pipe Line	‡76cQ	Dec. 31, 29	1,700	59½	59⅜	59	59	0
29¾	16	25⅞	4	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	500	8⅜	9½	8⅜	8½	— ⅜
49⅝	41	46¾	25½	2,845,350	50	do pfd	.....	May 1, 25	50	31	31	31	31	— ⅛
31¼	19	30¾	20	75,959,255	25	Pure Oil Co.	37½cQ	Dec. 16, 29	12,300	24	24⅜	23½	24	0
119	108	116	108	13,000,000	100	do 8% pfd	$2Q	Jan. 2, 30	40	112½	113⅝	112½	113⅝	+ 1½
56	23½	49⅝	20	47,127,725	25	Richfield Oil	50cQ	Nov. 15, 29	22,300	24⅝	24⅞	22⅞	23⅛	— 1¾
.....	.....	42½	15	(sh) 1,200,000	N.P.	Rio Grande Oil Co	‡$1S.A.	July 25, 29	3,300	19⅜	19½	18⅝	18⅝	— ⅛
64	44⅝	64	43⅛	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.873	Aug. 10, 29	19,900	53½	54⅝	53⅛	54½	+ ⅝
57½	39⅜	55¾	43	(sh) 65,203,000	£2	Shell Transport & T.	$1.447	July 23, 29	.....	.....	.....	.....	.....	.....
39⅝	23¼	31⅝	19	12,254,979	N.P.	Shell Union Oil	35cQ	Dec. 31, 29	8,700	23⅜	23⅝	22½	23¼	+ ⅛
27¼	18⅛	40¼	15	$8,357,280	$10	Simms Petroleum	40cQ	Dec. 14, 29	1,600	25¾	26¼	25¾	26	— ⅛
46⅜	17⅜	45	21	5,494,095	N.P.	Sinclair Consolidated	50cQ	Jan. 15, 30	39,000	24¾	24¾	23⅝	23⅝	— ⅝
110	102½	111	103	$16,025,200	$100	do pfd	$2Q	Nov. 15, 29	400	109⅝	109⅝	109⅝	109⅝	+ ⅛
42⅝	25	46½	28	27,396,590	25	Skelly Oil Co.	50cQ	Dec. 16, 29	3,500	31	31½	30⅝	31½	+ ½
80	53	81⅞	51½	(sh) 13,016,435	N.P.	S. O. California	‡62½cQ	Dec. 16, 29	10,800	61¼	61½	60⅜	61	— ¼
59⅜	37¾	83	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Dec. 16, 29	69,900	66	66	64¼	65⅛	— ¾
45½	28¾	48⅛	31¾	434,094,575	25	S. O. New York	40cQ	Dec. 16, 29	18,900	33⅛	33⅛	32½	32⅝	— ⅛
77	31½	84¾	55	(sh) 1,297,847	N.P.	Sun Oil	‡25cQ	Dec. 16, 29	600	59	59⅜	58	59⅜	0
110	110	105½	100	$5,000,000	$100	do pfd	$1.50Q	Dec. 2, 29	50	...	104	102¾	102¾	— 1⅜
14¼	2½	24	5¼	(sh) 1,304,698	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	3,400	7¼	7¼	6⅜	6½	— ⅝
74⅝	50	71⅞	50	$211,082,925	$25	The Texas Corp.	75cQ	Jan. 1, 30	17,300	56	56⅛	55⅛	55½	— ¼
26⅝	12⅛	23⅞	9½	8,380,340	10	Texas Pacific Coal & Oil	2½%s	Dec. 31, 29	3,600	10½	10⅝	10½	10⅝	+ ⅛
41½	19⅝	40	14	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Dec. 31, 29	300	21⅞	21⅞	21⅞	21⅞	0
100⅛	86⅜	97½	85⅛	$20,321,000	$100	do 5½% pfd.	$1.25Q	Nov. 15, 29	500	87¾	87¾	87¾	87¾	+ ¼
25	14¾	23½	10	(sh) 4,877,976	N.P.	Tide Water Associated	.....	Aug. 1, 27	11,500	12¾	13	12½	13	+ ⅜
91¾	81⅞	90⅞	74⅛	$72,989,200	$100	do pfd	$1.50Q	Jan. 2, 30	500	84	85	84	84	+ 2⅞
14½	6¾	15¼	5⅛	(sh) 3,842,029	N.P.	Transcontinental Oil	.....	.....	91,600	8¾	9⅜	8¾	9⅛	+ ½
58	42¾	54½	42⅛	$40,858,375	$25	Union Oil of California	‡50cQ	Nov. 9, 29	1,500	45¼	45¼	45	45¼	+ ¼
128¼	110	163¾	121⅞	31,101,200	100	Union Tank Car Co.	$1.25Q	Dec. 2, 29	400	138	138	138	138	—10
44⅞	26	42⅞	15	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Jan. 2, 30	4,200	19⅞	20⅜	19	20⅛	+ ⅛
38	20⅛	38	25	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 21, 29	800	27½	27½	16¾	27⅛	— ⅛
22⅛	17¼	29¾	12⅞	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	200	14½	14⅞	14½	14⅞	+ ⅜

*New High †New Low xEx-Dividends ‡Also Extras s-Stock Total Sales 565,660

Pittsburgh Curb Market

Transactions Week Ended Jan. 11, 1930

	Sales	High	Low	Last	Change
Ark. Gas A	360	10¼	9⅜	9⅜	+ ⅜

Tank Wagon Tables

(Continued from Page 101)

	Gasoline T.W.	Gasoline Tax	Total T.W.	Oil S.S.	Oil T.W.
BRITISH COLUMBIA					
Vancouver	23	3	26	30	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	22	5	27	31	24
Moncton	22	5	27	31	24
NOVA SCOTIA					
Halifax	22	5	27	31	24
Sydney	22	5	27	31	24
PRINCE EDWARD ISLAND					
Charlottetown	22	5	27	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Financial Notes

Standard Oil Co. of Indiana—Holdings in Pan American Petroleum & Transport Co. are reported to amount to approximately 80 per cent.

Rio Grande Oil Co.—Dividend payments are to be on a quarterly instead of a semi-annual basis. The first quarterly dividend of 50 cents a share is to be paid Jan. 25 to stock of Jan. 10 record. Conversations looking toward consolidation of Rio Grande with Sinclair Consolidated Oil Corp. are reported to be under way.

Galena Signal Oil Co.—Hearing of petition seeking dissolution has been set for Feb. 17 in the court at Franklin, Pa. Its successor, the Galena Oil Corp., has begun operation of the former Galena Signal properties.

Richfield Buys New York Chain

NEW YORK, Jan. 11.—Richfield Oil Corp. of New York has bought the chain of Super Service Stations, Inc., Lockport, N. Y. The chain contains 25 service stations and about 180 dealer accounts. together with three bulk plants. It is reported the consideration was approximately $750,000.

Pittsburgh Stock Exchange

Transactions Week Ended Jan. 11, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas	60	10⅛	10⅛	10⅛	+ ⅜
do pfd	200	7⅝	7⅝	7⅜	+ ⅛
Devonian Oil	270	12	11	11	+ ¼
Dixie & Util. pfd.	10	70	70	70	0
Lone Star Gas	9,282	38	35	35¾	—2¼
do pfd	715	106½	104¾	106½	+1⅞
Plymouth Oil	200	26⅜	26⅛	26⅜	+ ⅛
Pgh. Oil & Gas	587	3	3	3	0
Shamrock Oil & Gas	315	18½	18	18	— ¾

Oil Dividends

	Amount	Payable	Stock of Record
Barnsdall Corp. A & B q.	50c	Feb. 7	Jan. 15
Cosden Oil pfd. s.a.	$3.50	Feb. 1	Jan. 15
Eureka Pipe Line q.	$1	Feb. 1	Jan. 15
Rio Grande Oil q.	50c	Jan. 25	Jan. 10
Shell Transport	97c	Jan. 28	Jan. 15
Skelly Oil q.	50c	Mar. 15	Feb. 14
Tide Water pfd. q.	$1.25	Feb. 15	Jan. 17
Union Oil q.	50c	Feb. 10	Jan. 17
do stock	1%	Feb. 10	Jan. 17

Modern Refining—Science and Practice

(*Continued from Page* 58)

In the commercial cracking range, 750 F. to 1150 F., part of the above is about what happens to a paraffin molecule. Low temperature operations are more paraffinic, less coke forming, and less olefinic than high temperature ones. The latter also produce more unsaturates, more diolefins and more aromatics.

Surface catalytic and time factors can destroy conclusions, unless they are specifically stated, and we are definitely handicapped because of the difficulty in analyzing liquid products of cracking reactions, and, of course, in identifying intermediate reaction products.

When one speaks of a paraffinic charging stock one thinks of a type of oil like Pennsylvania oil. But this is only paraffinic in that it contains more paraffins than most oils; liquid and solid paraffins. The bulk of the heavier fractions is made up, as far as we know, of polynapthenes. This is our information from work that has been done on the lubricating fractions. Aromatics are apparently present in small quantity.

Hence in cracking a Pennsylvania, or like stock, one is cracked that is to a considerable degree napthenic, and to some extent aromatic, although the results will be decidedly influenced by the paraffins present,[22] but in addition side chains will split from the naphthenes, and the latter will dehydrogenate to aromatics, in some degree, with the formation of hydrogen.

One can crack paraffin wax, say, at 750 F., so paraffins and olefins form; no coke and gas. But so-called paraffinic charging stock only contains more paraffins than most stocks. We know that at 750 F. that coke, tar and recycle stock, and gas form, and in the main the gasoline is composed of paraffins, aromatics, unsaturates and naphthenes. Hence more involved reactions occur than when a simple paraffin primarily cracks.

In a Burton still operation, 90 per cent of the coke forms when the last 5 per cent of the pressure distillate comes over. All the time, 24 hours or less, heavy oil has been stewing in the still, some of the molecules, the aromatic ones, condensing to coke.

[22]Except as the temperature is raised too high. Extension of the time, say recycling, also influences the results.

Not all crude oil goes to refineries, says the December issue of The Texaco Star. Many barrels of it are sent directly to owners and operators of beauty establishments for oil shampoos.

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ATTENTION REFINERY MANUFACTURING EXECUTIVES! What NEW YEAR problems confront you? High sales demand quick deliveries resulting in feverish markets thereby costs, equipment and new methods are neglected. Do you have adequate yield and inventory control? Does your accounting reflect actual manufacturing conditions and give departmental foremen cost figures, measuring the results of their actions? Everything is measured by comparison. Do departmental operating expenses reveal your last month's loss? These facts can be given you by this man who knows refinery, pipe line and production accounting. Address Box 478.

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Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Jan. 11 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29	.....	...	...	...	...	.....
21¼	15	18	13	.....	....	do certificates	36c	June 5, 29	3,800	17	17⅛	17	17⅛	0
20½	14⅜	17	11	.....	£ 1	do ctfs. non-voting	36c	June 5, 29	9,800	17	17⅛	17	17⅛	+ 1/8
5	1¼	2½	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	⅞	⅞	⅞	⅞	+ 1/8
9¾	3¼	4½	1	$10,000,000	$50	do pfd	.....	.....	.....	...	...	...	...	.....
56	44½	46½	25	$1,000,000	25	Borne-Scrymser	$1 S.A.	Oct. 15, 29	.....	...	...	...	...	.....
76	58	74¼	55	10,000,000	50	Buckeye Pipe Line	‡$1Q	Dec. 14, 29	200	68¼	68¼	68⅛	68⅛	— 1⅜
161	117¼	210	130	3,000,000	25	Chesebrough Mfg	‡$1Q	Dec. 30, 29	100	166½	166½	166½	166½	— 8
23	16	29	8⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	400	14	14	14	14	— 1/8
17½	9½	11¾	5⅝	.....	N.P.	Creole Petroleum	.....	.....	4,800	6¼	6⅜	6⅛	6¼	— ¼
82	67	95	40	1,500,000	50	Cumberland Pipe Line	$1Q	Dec. 16, 29	.....	...	...	...	...	.....
88	64½	70½	42	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 29	100	50	50	50	50	+ 2
13	4¼	7	3⅝	16,000,000	100	Galena Signal Oil	.....	June 30, 25	400	5	5	5	5	0
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30, 26	60	75¾	75¾	75¾	75¾	+ ½
89¾	35	88	71½	2,000,000	100	do old pfd	.....	June 30, 26	.....	...	...	...	...	.....
114¾	59¼	128	74¾	73,685,700	25	Humble Oil & Refining	50cQ	Jan. 1, 30	3,400	85⅞	86⅜	85	85	— 1
290½	176½	340½	260	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 16, 29	1,900	305	310	305	306½	— 3½
104	56¾	41	22	(sh) 26,421,768	N.P.	Imperial of Canada	12½cQ	Dec. 2, 29	2,900	26½	26⅝	26½	26½	0
91⅞	74⅜	41⅞	26	$1,000,000	$10	Indiana Pipe Line	‡50cQ	Nov. 15, 29	900	39⅞	39⅞	39⅞	39⅞	0
55	35	37½	15	(sh) 14,247,088	N.P.	International Petroleum	12½c	June 25, 29	7,400	21⅜	*37½	20⅝	21½	+ ⅜
32⅜	19⅜	25⅞	10½	$6,363,350	12.50	National Transit Co	‡25cQ	Dec. 16, 29	1,900	21⅞	22⅜	21⅜	22⅜	+ 1¼
75	38½	85	72	1,000,000	10	New York Transit	‡40cQ	Jan. 15, 30	.....	....	....	....	....	.....
....	....	....	....	.....	....	do new	.....	.....	.....	....	....	....	....	.....
69	56½	63	41	2,000,000	50	Northern Pipe Line	$2 S.A.	Jan. 2, 30	.....	...	...	...	...	.....
83½	58½	79⅞	64⅛	60,000,000	25	Ohio Oil Co	‡50cQ	Dec. 14, 29	400	71	71	71	71	0
84	28	44½	18⅜	10,000,000	25	Penn Mex. Fuel	$1	Dec. 14, 29	100	20	20	20	20	0
220	167	50	29	4,000,000	25	Solar Refining	$1.25S.A.	Dec. 20, 29	.....	...	...	...	...	.....
19	12	23½	13	1,000,000	10	Southern Pipe Line	$10	Dec. 31, 29	500	13½	13½	13	13	— 1¼
71⅞	36¾	60¼	35⅛	30,000,000	25	South Penn Oil	‡50cQ	Dec. 30, 29	200	41	41	41	41	0
102	70	70	45	1,750,000	50	South West Pa. Pipe Lines	$1	Dec. 31, 29	.....	...	...	...	...	.....
95⅞	70⅞	63	45	348,175,069	25	S. O. Indiana	‡62½cQ	Dec. 16, 29	21,500	54½	54¼	52¾	52⅞	— 1⅛
27¾	15	33¾	18	8,000,000	25	S. O. Kansas	‡50cQ	Dec. 16, 29	4,300	29½	29⅞	29	29	— ⅛
49	44	46⅜	29	25,654,516	10	S. O. Kentucky	‡40cQ	Dec. 31, 29	3,700	33½	34¾	33¼	34⅛	+ ½
54⅜	39⅞	50¼	40	4,649,225	25	S. O. Nebraska	‡62½cQ	Dec. 20, 29	100	45¼	45¼	45¼	45¼	+ 1
134	71	129	60	14,000,000	25	S. O. Ohio	62½cQ	Jan. 2, 30	250	86	86½	86	86	— 2⅜
125	116	125½	106	7,000,000	100	do pfd	$1.75Q	Dec. 2, 29	40	118¼	118¼	118¼	118¼	0
23⅛	16	18	5⅜	861,466	25	Swan Finch	30c	Jan. 15, 29	.....	...	...	...	...	.....
111	72	133¾	75	126,154,000	25	Vacuum Oil	‡$1Q	Dec. 20, 29	2,800	96	96	94	94	— 2

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended Jan. 11 Sales	First	High	Low	Last	Change
1⅛	.53	.72	.125	$5	Amer. Cons. Oilfields	800	1/16	1/16	1/16	1/16	0
9½	3⅛	8⅝	1⅛	N.P.	Amer. Maracaibo	600	1½	1⅛	1⅛	1⅛	0
4⅛	2¼	4¾	1	$10	Argo Oil	.....	...	...	...	...	.....
3¾	3⅜	26	3¾	N.P.	Arkansas Nat. Gas	6,600	9⅞	10⅛	9¾	10	— ⅛
....	....	24¾	6½	N.P.	do A	14,800	9⅞	10	9⅜	10	+ 1⅛
...	...	9	4	10	do pfd	300	8	8	7⅞	7⅞	— ⅛
55	32¾	70	50	N.P.	British American Oil	.....	...	...	...	...	.....
23⅛	3¾	4⅞	⅞	25c	Carib Syndicate	4,800	1	1	††⅞	1	0
....	....	68⅛	20	N.P.	Cities Service new	78,300	27⅜	30	27¾	30	+ 2¼
103½	94½	99¼	84	100	do pfd	1,200	88⅛	88¾	88	88¾	+ ⅝
9⅝	8⅞	9¼	8	10	do pref. B	.....	....	....	....	....	.....
97	88½	96	81	100	do pref. BB	.....	....	....	....	....	.....
2¼	1	1½	¼	1	Colombia Syndicate	4,500	1/16	⅜	1/16	1/16	0
17¾	9¾	15	3⅞	N.P.	Colon Oil	3,400	5⅛	6	5⅜	5⅜	— ⅛
8⅛	6¼	11¾	2½	10	Consolidated Royal	.....	....	....	....	....	.....
....	....	135	42	N.P.	Cosden Oil Co	200	62	62	62	62	0
....	....	82	55	....	do pfd	1,300	½	½	⅜	⅜	+ 1/8
3¼	.76	2½	¼	N.P.	Crown Central	.....	....	....	....	....	.....
15	6¾	11¾	4	N.P.	Crystal Oil	.....	....	....	....	....	.....
50	48	51¼	51¼	$100	do pfd	.....	....	....	....	....	.....
33⅛	8⅛	26	6½	N.P.	Darby Petroleum	1,100	8½	8¾	8½	8¾	0
2⅞	1	11	2	N.P.	Derby Oil & Refining	100	5	5⅛	5	5⅛	+ 1/8
21¼	7⅛	44	5	N.P.	do pfd	200	30	30	30	30	— 6
165	101¾	209	115	$25	Gulf Oil Corp	1,800	138¾	145	136½	140	+ 2¾
7½	5¾	7½	1⅜	5	Homaokla Oil	.....	....	....	....	....	.....
....	....	49¼	5	$1	Indian Territory	94,900	23	32	23	30⅜	+ 8⅜
3⅜	1	2⅞	⅝	10	Intercontinental Pet.	4,700	⅞	1¼	⅞	1¼	+ ¼
3	¼	3⅜	1¼	N.P.	Kirby Petroleum	1,800	2	2½	2	2¼	+ ⅜
9⅜	5¼	6⅛	1	N.P.	Leonard Oil & Dev	800	1⅜	1⅜	1¼	1⅜	+ 1/8
43⅜	20	38⅞	18	N.P.	Lion Oil & Refg	1,800	19⅛	20	19¾	19⅞	0
....	....	67⅛	28	N.P.	Lone Star Gas	4,300	37⅛	37¾	35	35	— 2½
1⅞	.50	1¼	¼	1	Magdalena Syndicate	1,900	¼	1/16	¼	1/16	0
48½	32	38½	15	N.P.	Margay Oil	400	15	15	15	15	— ½
8	2¾	6⅜	2¼	N.P.	Mexico-Ohio Oil	900	2¼	2¼	†2¼	2¼	— 1/8
....	....	42	8	N.P.	Missouri-Kan. P. L.	1,800	19¾	19⅞	19	19¾	+ ½
1¾	.76	1½	¼	1	Mountain & Gulf	.....	....	....	....	....	.....
28⅞	19½	22⅞	7	10	Mountain Producers	2,400	8⅞	8⅞	8½	8½	— ⅜
....	....	43⅞	24	N.P.	Nat. Fuel Gas (new)	5,800	26¼	26¼	25½	25⅞	— ⅛
5⅝	4¼	5	2¼	5	New Bradford	900	2⅝	2⅛	2⅝	2⅞	0
5½	3	3⅞	2¾	10	New England Fuel	100	3⅛	3⅛	3⅛	3⅛	0
11⅞	7⅛	9⅜	2½	1	New Mex. & Ariz	400	3½	3¾	3½	3¾	+ ¼
15½	11½	24½	11¼	25	New York Petrol	500	16½	16½	16½	16½	— ⅜
13¼	8¼	18½	6¾	N.P.	North Cent. Texas	300	8½	8⅞	8	8	— ½
....	....	19¼	8¾	N.P.	Oil Stock, Ltd. A	100	9	9	9	9	+ ½
....	....	18¼	10	N.P.	do B	.....	....	....	....	....	.....
26¼	20	26⅝	12¼	N.P.	Pacific Western Oil	400	13½	14¼	13¼	13¼	— ¼
6	2¼	3½	½	N.P.	Pandem Oil	32,000	1¼	1½	1¼	1⅜	— 1/8
15⅝	8½	10½	2¾	N.P.	Pantepec Oil	300	2⅞	3⅛	2⅞	3⅛	+ 1
20	10⅝	25½	22½	$25	Paragon Refg. B. ctfs.	.....	....	....	....	....	.....
....	....	34½	17	N.P.	Petroleum Corp	800	19⅞	20¼	19⅝	20	0
31⅜	26½	37	22	N.P.	Plymouth Oil	100	27	27	27	27	— ⅛
18	8	16	9⅛	25	Red Bank Oil	.....	....	....	....	....	.....
13	4⅛	8½	1⅜	N.P.	Reiter-Foster	500	2½	2⅞	2⅜	2⅞	+ ¼
31⅛	23¼	25½	19	$25	Richfield pfd	200	22	22	22	22	— 1½
....	....	29	13	....	Root Refining pfd	.....	....	....	....	....	.....
12	4⅝	11	3	N.P.	Ryan Consolidated	100	4⅛	4⅛	3¾	3¾	0
7¼	5½	5⅞	1⅞	$10	Salt Creek Cons	600	2¼	2⅜	2⅛	2⅛	+ 1/8
35	23¼	25½	9	10	Salt Creek Prod	1,100	10¾	11½	10¾	11½	+ ⅝
3⅛	1	2½	½	5	Savoy Oil	.....	....	....	....	....	.....
40	27	33⅜	10	25	Shreveport El Dorado	.....	....	....	....	....	.....
....	....	24	11⅜	N.P.	Southland Royalty	700	14	15	14	14	— 1⅜
....	....	12	4	N.P.	Sunray Oil	2,800	6¼	8⅜	6¾	8⅛	+ 1
....	....	23	7⅛	N.P.	Texon Oil & Land new	400	9⅜	9⅜	8⅝	8⅝	— 1⅜
22⅞	13	16⅞	11⅝	$10	Tidal Osage	.....	....	....	....	....	.....
21¼	13⅛	16½	10⅛	10	do not-voting	.....	....	....	....	....	.....
93¾	75	155	80	100	Transcontinental pfd	.....	....	....	....	....	.....
74¼	18	81⅛	66	10	Venezuela-Mexico	.....	....	....	....	....	.....
9⅛	4¾	6½	1⅜	3	Venezuelan Petrol	3,300	2½	2½	2¼	2½	0
....	....	2¼	66	N.P.	White Star Oil	.....	....	....	....	....	.....
8¼	4⅞	9⅛	2	1	Woodley Petroleum	.....	....	....	....	....	.....
⅜	⅛	5⅜	¼	25	Y Oil & Gas	100	½	½	½	½	

*New High †New Low

New York Bonds

Week Ending Jan. 10

	High	Low	Last	Change
Asso. Oil Gold 6s	102¾	102¾	102¾	+ ¼
Atlantic Refg. deb. 5s	101	100	100	— ¼
Cal. Pet. 5s	94½	94½	94½	+ ½
Cal. Pet. 5½s	99¼	98½	99	— ⅜
General Pet. 5s	101	100¼	100¾	0
Humble Oil & Refg. 5s	100¾	100⅛	100½	0
Humble Oil & Refg. 5½s	101¾	101¼	101½	— ⅛
Pan Amer. P & T 7s	105	105	105	+ 1½
Pan Amer. P & T 6s	103¼	103	103	0
Pan Amer. P & T 6s	90½	89	90⅛	+ ⅛
Phillips Pet. 5¼s	92½	90½	92½	+1
Pure Oil 5½s	100½	99¾	100	+ ¼
Richfield Oil Calif. 6s	97	95⅝	95¾	— ¼
Shell Union Oil 5s	96⅜	95¼	96	+ ¾
Sinclair Con. Oil 7s	102	101	101⅝	+ ⅝
Sinclair Con. Oil 6½	100¾	99¾	99¾	— ¼
Sinclair Con. Oil 6s D	100¼	99⅞	100⅛	+ ⅛
Sinclair Con. Crude 5½s	97½	97	97¼	0
Sinclair Pipeline	95¼	94½	95	+ ¼
Skelly Oil 5½s	93¼	92	92¼	—1
S. O. N. J. 5s	102¾	101½	101½	0
S. O. N. Y. 4½s	97¼	96½	96½	— ⅜
Union Oil of Calif. 6s A	107	107	107	0
Union Oil of Calif. 5s C	99¼	98¾	98¾	+ ¼
Warner-Quinlan 6s	88	88	88	+1
White eagle Oil 5½s	106	102½	103½	+ ¾

New York Curb Bonds

Week Ending Jan. 10

	High	Low	Last	Change
Cities Service 5s '66	84	82¾	83	— ¼
Cities Service G. 5½s '42	84½	83¾	84	— ⅛
Cities Service G. P. 6s '43	94	90	94	+4
Cont. Oil 5¼s '37	95¼	94¾	95¼	+1¼
Empire O. & R. 5½s '42	84¼	83¼	84	— ⅛
Gulf Oil 5s '37	100½	99½	100	+ ¼
Gulf Oil 5s '47	100¾	100	100	— ½
Independent Oil 6s '39	103	102½	102⅝	— ⅛
Shell Union Oil 5s '49	99⅛	98¼	98¼	— ½
Sun Oil 5½s '39	101½	100⅜	101	+2

Cleveland Stock Market

Jan. 10	Par Value	Bid	Asked
Canfield Oil Co	$100	100	135
do pfd	100	...	...
Fred G. Clark, Inc	10	8½	10
National Refining Co	25	33	35½
do pfd	100	...	135
Paragon Refining Co	25	9	9½
do pfd	N.P.	...	...
do ctfs	...	...	10

Ex Dividend.